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HENDERSON

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GILA WILDERNESS VISITOR EVALUATION AND ANALYSIS

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GILA WILDERNESS VISITOR EVALUATION AND ANALYSIS

I. INTRODUCTION

The Gila Wilderness is a unit of the National Wilderness Preservation System, being an area "...where earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." The Wilderness is located entirely within the State of New Mexico and the Gila National Forest and consists 429,546 gross acres. Five Ranger Districts have administrative responsibilities for management of the Wilderness.

Settlement of southwestern New Mexico has had little effect on the Gila Wilderness. Signs of permanent settlement within the Wilderness are few. Activities associated with use of the forage and mineral resources have left a more noticeable impact on the land. The Gila Wilderness offers much in the way of true wilderness character with many of its remote sections seldom, if ever, visited by man. Its mosiac of many different vegetative types, climatic conditions and topographic features offers an outstanding challenge for visitors, enriched by abundant solitude. The variety of plant and animal life, supported by widely varied ecologic niches, provides a greater opportunity for informal nature study and scientific study than is available in most southwestern wildernesses.

A distinguishing characteristic of the Gila Wilderness is the volcanic rock escarpments along the major drainages with many pinnacles and spires. Another outstanding feature is the largest stand of virgin ponderosa pine in the world, under continuous protection of wilderness and primitive classification.

During nearly three centuries of settlement in New Mexico, the Gila Wilderness has had practically unbroken solitude. This rugged country, called "Sierra del Gila" by the early Spanish, was home for various cultures of prehistoric Indians. Evidence of this occupation exists today in the form of pit houses, cliff dwellings, and pueblo ruins. The area provided sanctuary for Apache Indians during their years of warfare against those attempting to settle there.

The market for furs, attraction of mineral wealth, and forage resources of the area, combined with growing pressure for settlement expansion, led settlers to overcome their fear of the Apaches and gradually penetrate the wild country of the Gila in the late 1800's. In the early 1880's, settlements existed at locations such as T. J. Ranch, Alum Camp, and along the Middle Fork of the Gila River. Spanish-American settlements came to the East Fork of the Gila River during the 1890's. The mining town of Mogollon, northwest of the Wilderness, was already active in 1890.

The Gila River Forest Reserve established on March 2, 1899, brought some regulation in the use of its resources. Quantities of minerals that were found, were not sufficient to cause the quick settlement and road building that occurred at other locations. Timber resources of the Gila country remained virtually untapped because of remoteness and inaccessibility. So, a broad area of wilderness remained relatively untouched except for the use by livestock, a scattering of homesteads, a few fences, and early trails necessary as avenues of travel.

Due primarily to the efforts of Aldo Leopold, the Gila Wilderness was administratively designated on June 3, 1924. It included most of the present Gila and Black Range Primitive Areas, and was the first designated Wilderness. Boundary adjustment, during 1930, on the east, north, and west sides reduced acreage.

On May 8, 1933, the original Gila Wilderness was redesignated as a Primitive Area under Secretary of Agriculture's Regulation L-20. The North Star Road corridor separated the Gila Primitive Area to the west with 563,107 acres, and the Black Range Primitive Area to the east with 169,984 acres.

Minor Gila Primitive Area boundary adjustments were made in 1936. In 1938, additional adjustments were made and the area was redesignated as the Gila Wilderness. Exclusion of 5,150 acres from the southwest corner of the Wilderness was made in 1944 to allow removal of fluorspar, then in high demand because of World War II. On January 15, 1953, following the "James Committee" hearings, a separate Gila Wilderness of 438,626 acres, and the Gila Primitive Area of 137,388 acres were formed under Secretary of Agricultures' Regulation U-1. At this point these two areas were roughly in the form they are today.

In 1957, an extension of a road corridor to the Gila Cliff Dwellings National Monument removed 4,600 acres from the Gila Primitive Area. In 1963, 320 acres of the Gila Wilderness were transferred to the National Park Service to increase the size of the Gila Cliff Dwellings National Monument. Following passage of the Wilderness Act of 1964, the Gila Wilderness became a unit of the National Wilderness Preservation System. The official boundary description prepared in 1965 resulted in minor acreage adjustments between the Wilderness and Primitive Area. Presently there are proposals before Congress for the reclassification of Gila Primitive Area to Wilderness and add this acreage to the presently classified Gila Wilderness.

The Gila Wilderness has a lengthy history of management. The original management plan for the Gila Wilderness as it is known today was prepared in 1954. It briefly described the Wilderness and its resources, uses and activities. General management policy regarding improvements and uses that would be permitted was set, but specific

management direction and follow up management measures were not detailed. In 1976, a new Gila Wilderness Plan was approved and improved upon the 1954 Wilderness Plan by identifying management objectives and setting specific management direction. The management objectives established for the Gila Wilderness are:

A. General Objectives

1. Maintain an enduring system of high-quality wildernesses.

2. Prepetuate and, where necessary, restore the wilderness resources.

3. Provide, to the extent consistent with items A and B, opportunities for public use, enjoyment, and understanding of wildernesses, and the unique experiences dependent upon a wilderness setting.

4. Maintain the plants and animals indigenous to the area.

5. Accommodate and administer those uses or activities which are of the type generally prohibited by the Wilderness Act, but which are specifically excepted by that act or subsequent establishing legislation in such manner as to minimize their lasting impact on the wilderness resource and values, and so that the end results will provide optimum total benefits to the American people.

6. Maintain stable watersheds.

B. Specific Objectives

1. Determine visitor and livestock use capacities for homogeneous segments of the Wilderness, in order to provide for balanced distribution of use and controls over use where capacity is approached or exceeded.

2. On that portion of the Wilderness with domestic livestock grazing use, special management emphasis will be pointed toward balancing livestock grazing and management with forage production on suitable range consistent with maintaining and/or restoring the wilderness resource.

3. Eliminate all nonessential man-made structures. Redesign, relocate, or replace essential structures to lessen their impact upon the wilderness resource.

4. Determine the possibility and desirability of stocking additional Wilderness streams with Gila trout, an endangered native species once common to the area.

5. Retain large portions of the Wilderness in their present state as trailless and essentially free from man's and domestic livestock influence.

6. Eliminate all nonessential land occupancy uses.

7. Effectively balance the number and distribution of on-the-ground personnel needed for maintaining and protecting the Wilderness.

8. Provide cooperation and enforcement necessary for minimizing external pollution of both air and water entering the Wilderness.

9. Reduce man's influence over naturally occuring wildfires within the Wilderness.

The management direction is specific and addresses all resource activities occurring within the Wilderness. This management direction is quite detailed and lengthy and to keep this report brief, the management direction is included in the appendix as Appendix #1.

II. Purpose

Visitor use within the Gila Wilderness began to rise at a rapid rate during the 1950's and continues to the present. Managers in 1977 were becoming increasingly concerned that visitor use was approaching a level that was contradictory to the objectives set for the area. This concern was not based on firm survey information; instead use information was based solely upon limited observation and estimation. To correct the lack of accurate use information, a mandatory wilderness permit system was implemented in 1978. In addition to the concerns of increasing visitor use, managers were in a dilemma searching for methods to accomplish the management objectives and implement the management direction pertaining to wilderness visitor management that is contained in the Gila Wilderness Plan. Specifically, managers were unsure of the methods to use to arrive at visitor carrying capacities and where to direct their information and education efforts to reach the majority of the Wilderness users. The purposes of this report will be to address these management concerns. To accomplish the purpose of this report, existing wilderness management objectives and management direction must be closely reviewed. If this review reveals areas to strengthen or ways to make the objectives or management direction more specific and relevant to wilderness problems, the findings will be highlighted in the conclusion section of this report.

III. Analysis Methods

To address the concerns of managers two approaches will be used; one will deal with analysis of information received from Wilderness permits, the other will look at Wilderness carrying capacity.

A. Wilderness Visitor Permits

The Wilderness permit requires the following information from visitors: zip code, area code, start and ending dates of visit, location of entry, location of exit, method of travel, number of people in group, number of pack and saddle stock, number of water or other craft, travel zones, traversed, nights camped, and issuing office. The Wilderness computer program compiles this information into the following areas for analysis.

Origin of visitor - State and County or Population Center

a. Number of permits
b. Percent of total permits
c. Number of people
d. Percent of total people
e. Visitor day use
f. Percent of total use

Size of Groups - Travel Zone - Based on Occurrences of Groups in Travel Zone

a. Number of people in groups
b. Total people occurrences
c. Average group size
d. Group occurrences
e. Percentage of groups by size of group

Size of Groups - Entry Point

a. Number of groups and number of people in group
b. Total Groups
c. Total number of people
d. Average group size

Size of Groups - Exit Point

a. Number of groups and number of people in group
b. Total groups
c. Total number of people
d. Average group size

Length of Stay and Occurrence Patterns by Travel Zone - People

a. Day use
b. Transit Use
c. Number of nights camped
d. Total occurrences
e. Number of people
f. People occurrences
g. Percentage of people occurrences by a, b, and c above

Length of Stay and Occurrence Patterns by Travel Zone - Groups

a. Day use
b. Transit use
c. Number of nights camped
d. Total occurrences
e. Number of groups
f. Group occurrences
g. Percentage of group occurrences by a, b, and c above

Mode of Travel - Travel Zone - Based on People Occurrences in the Travel Zone

a. Foot
b. Horse
c. Boat non-power
d. Boat power
e. Canoe non-power
f. Canoe power
g. Ski
h. Snowshoe
i. Motorcycle
j. Bicycle
k. Snowmobile
l. Other
m. Total
n. Pack and saddle stock
o. Water other craft

Mode of Travel - Travel Zone - Based on Group Occurrences in the Travel Zone

a. Foot
b. Horse
c. Boat non-power
d. Boat power
e. Canoe non-power
f. Canoe power
g. Ski
h. Snowshoe
i. Motorcycle
j. Bicycle
k. Snowmobile
l. Other
m. Total
n. Pack and saddle stock
o. Water other craft

Mode of Travel - Exit Point - Number of Visitor Days

a. Foot
b. Horse
c. Boat non-power
d. Boat power
e. Canoe non-power
f. Canoe power
g. Ski
h. Snowshoe
i. Motorcycle
j. Bicycle
k. Snowmobile
l. Other
m. Total
n. Pack and saddle stock
o. Water other craft

Mode of Travel - Exit Point - Number of People

a. Foot
b. Horse
c. Boat non-power
d. Boat power
e. Canoe non-power
f. Canoe power
g. Ski
h. Snowshoe
i. Motorcycle
j. Bicycle
k. Snowmobile
l. Other
m. Total
n. Pack and saddle stock
o. Water other craft

Mode of Travel - Exit Point - Number of Groups

a. Foot
b. Horse
c. Boat non-power
d. Boat power
e. Canoe non-power
f. Canoe power
g. Ski
h. Snowshoe
i. Motorcycle
j. Bicycle
k. Snowmobile
l. Other
m. Total
n. Pack and saddle stock
o. Water other craft

Mode of Travel - Entry Point - Number of Visitor Days

a. Foot
b. Horse
c. Boat non-power
d. Boat power
e. Canoe non-power
f. Canoe power
g. Ski
h. Snowshoe
i. Motorcycle
j. Bicycle
k. Snowmobile
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Mode of Travel - Entry Point - Number of People

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i. Motorcycle
j. Bicycle
k. Snowmobile
l. Other
m. Total
n. Pack and saddle stock
o. Water other craft.

Mode of Travel - Entry Point - Number of Groups

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d. Boat power
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f. Canoe power
g. Ski
h. Snowshoe
i. Motorcycle
j. Bicycle
k. Snowmobile
l. Other
m. Total
n. Pack and saddle stock
o. Water other craft

Groups Present by Calendar Day for Individual Travel Zones

a. Day
b. Month

People Present by Calendar Day for Individual Travel Zones

a. Day
b. Month

The information provided by the Wilderness Program Permit Analysis is designed to serve a variety of needs; however, it can cause a manager to flounder in too much information and fail to use it effectively (Hendee, Stankey, Lucas - Wilderness Management - 1978). This report will attempt to use a rifle rather than a shotgun approach and use only the information needed to address management concerns mentioned previously in light of the management direction contained in the Gila Wilderness Plan. This report will focus on the following:

FIRST ANALYSIS

Origin of Visitor - Visitor information will be mapped to show percent of use by States. For those States that contribute more than 10% of total use, the use will be broken down by counties where the county contributes more than 1% of the total State use.

SECOND ANALYSIS

Entry and Exit Point Use - Visitor entry and exit point use expressed in total number of people will be mapped. Entry and exit point use will be grouped into homogenous zones and color coded.

THIRD ANALYSIS

Day Use - Day use expressed in number of occurrences will be mapped for each travel zone. Use levels will be grouped into homogenous zones and color coded. Day use is defined as a visit without an overnight stay.

FOURTH ANALYSIS

Total Visitor Use (Day Use Plus Overnight Use) - The total amount of visitor use as expressed in number of occurrences will be mapped. Visitor use will be grouped into homogenous zones and color coded.

FIFTH ANALYSIS

Camping Areas - The total camping occurrences by travel zone will be mapped. Camping use will be grouped into homogenous zones and color coded.

SIXTH ANALYSIS

Mode of Travel - A bar graph will be used to display total use expressed in number of people by their mode of travel: foot, horse, water craft, and ski or snowshoe. The amount of pack and saddle stock and water craft will also be displayed.

B. Wilderness Carrying Capacity

Carrying capacity is a complex concept that relates to many aspects of use in addition to number of users (Lucas and Stankey - Social Carrying Capacity for Backcountry Recreation). Combinations of factors (i.e., management objectives and management direction the physical and biological nature of the resource and the preferences or tolerances of visitors) must be taken into account when arriving at a carrying capacity number (Heberlein - Density, Crowding and Satisfaction: Sociological Studies for Determining Carrying Capacity).

Four types of carrying capacity for Wilderness have been identified: physical, ecological, facilities and social. The physical capacity is the amount of physical space available; the ecological capacity is the amount of human use an ecosystem can tolerate without unacceptable degradation; the facilities capacity is the physical improvements present such as trail heads, parking lots, etc. needed to accommodate visitors; the social capacity is the amount of visitors that can be put into an area before the quality of their experience is significantly reduced (Heberlein - Density, Crowding, and Satisfaction: Sociological Studies for Determining Carrying Capacity). Because of the size and usable acres and the number of entry/exit points, the physical and facilities capacities for the Gila Wilderness are not approaching their limits; however, the social and ecological capacities do appear to be approaching their limits. The social and ecological capacities also tie more closely with the intent of the management objectives and management direction contained in the Gila Wilderness Plan. Consequently, in this report only the social and ecological capacities will be examined.

IV. ANALYSIS

A. Wilderness Visitor Permits (C.Y. 78 Permits)

Because of the management concerns mentioned previously, a decision was made in the summer of 1977 to implement a mandatory wilderness permit system for the Gila Wilderness, Gila Primitive Area and the Black Range Primitive Area. A debate over the number of travel zones to be delineated surfaced; on one extreme, there were managers who favored only a small number of travel zones (3 to 6); on the other extreme, there were managers who favored travel zones for each trail and all trail junctions (200 plus). The managers favoring travel zones for each trail and trail junctions prevailed and the permit system was implemented January 1, 1978 with 247 identified travel zones. In the early spring of 1979, the calendar year 1978 permits were submitted for keypunching and processing. At about this time, the wilderness computer program was revised causing a long time delay until the new program had all the bugs worked out. Once the revised program was operational, a new problem came to light; the revised program could handle no more than 199 travel zones. This problem was solved by separating the 1978 information into two separate parts for computer analysis and then manually combining the two analysis to arrive at a total calendar year analysis. Combining of travel zones so that the limits of the computer program are not exceeded is needed to simplify future calendar year analysis.

The first area that will receive our attention is that of visitor origin. The origin of the visitor in numbers of people and expressed as a percentage of the total visitation was mapped (Exhibit 1). States contributing more than 10% of the total use are broken down by counties or population centers where the county exceeds 1% of the total state use (Exhibit 2). Arizona, New Mexico, and Texas are the only states contributing more than 10%. These three states account for 84% of the total wilderness use.

It is interesting to note that in CY 1978 the Gila Wilderness drew visitors from 46 States. One might jump to the conclusion that the Gila enjoys nationwide attraction; however, on closer inspection, one finds that 49% of the use originates from the State of New Mexico, 25% of the use originates from the State of Texas and 10% of the use originates from the State of Arizona. To look at this breakdown another way, three circles were drawn with the Wilderness being in the center. The first circle represents use received from within 100 miles; 1,858 people came from this area and represents 20% of the total use. The second circle represents use received within 200 miles; 6248 people came from this area and represents 69% of the total use.

EXHIBIT 1

ORIGIN OF THE WILDERNESS VISITOR

HIBIT 1

DERNESS VISITOR-NUMBERS OF PEOPLE

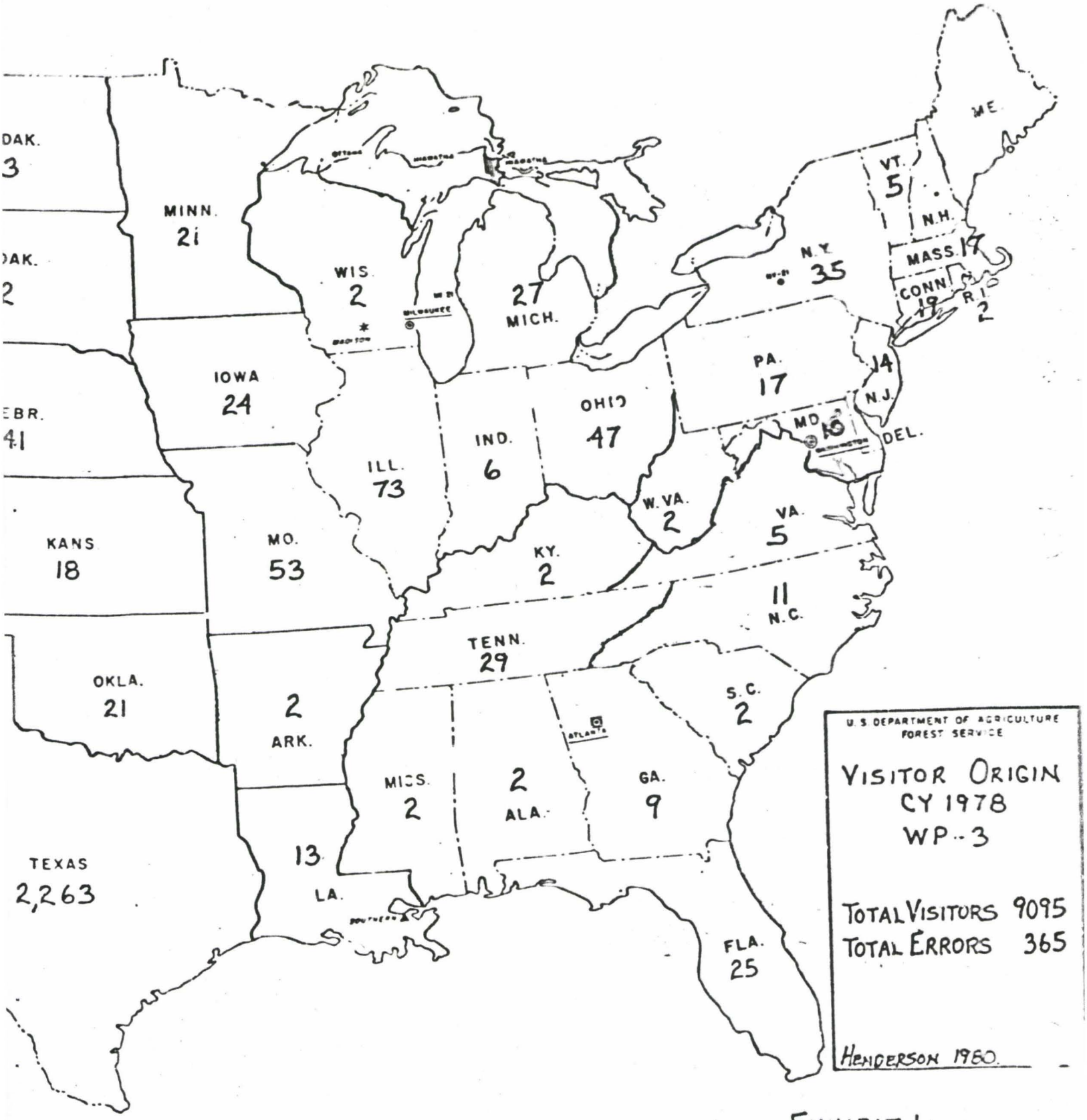
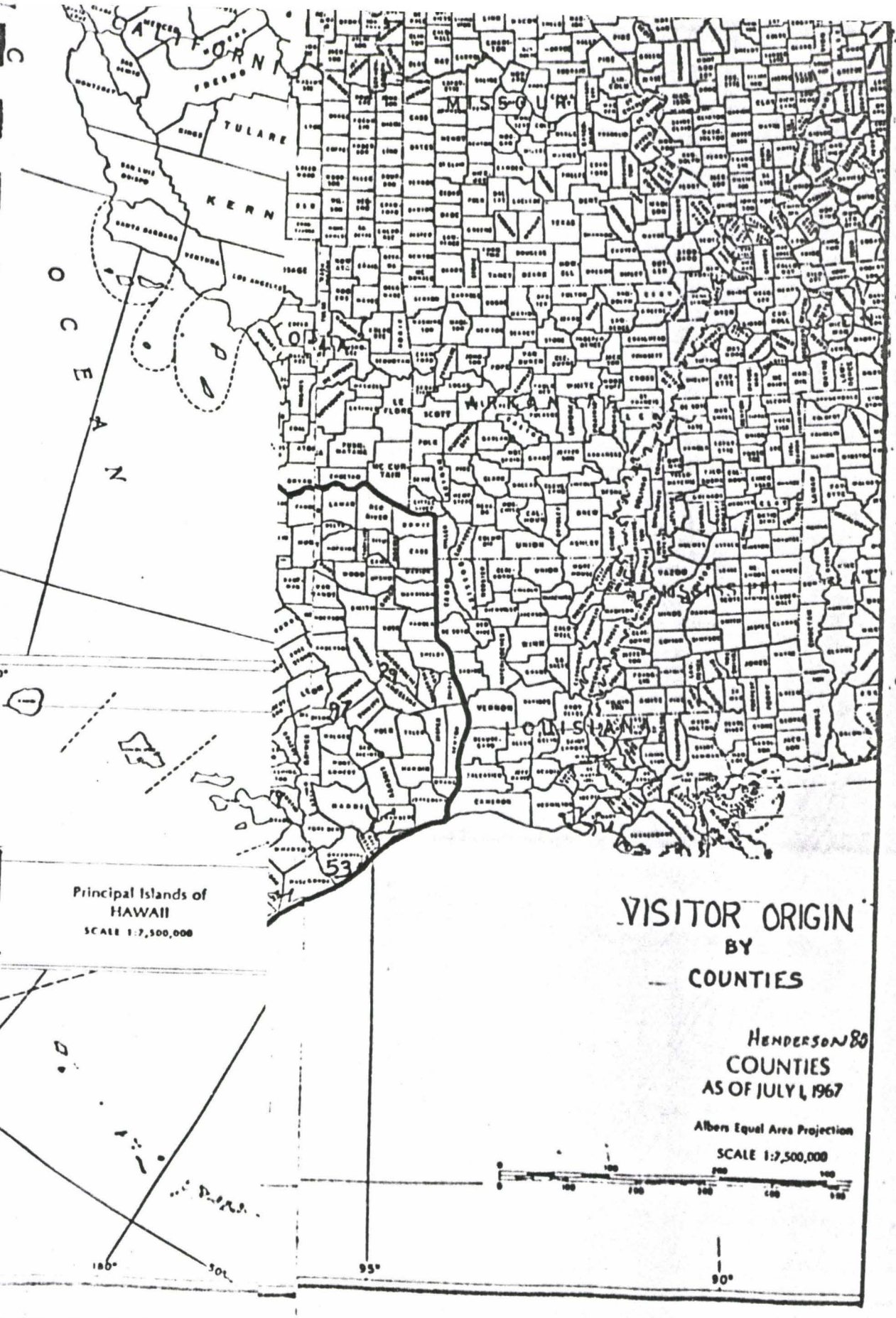
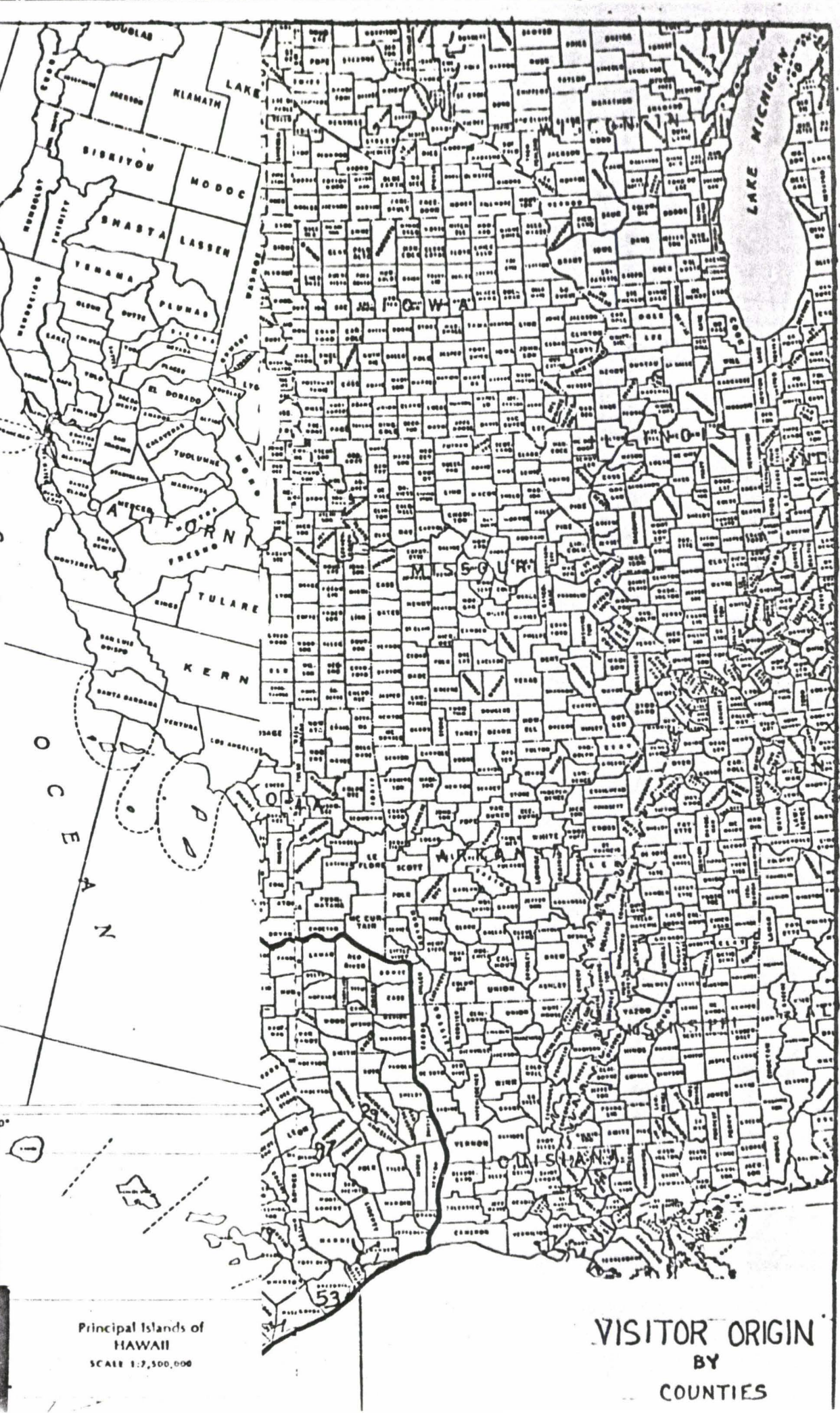


EXHIBIT 1


TULARE
KERN
OCEAN
MISSOURI
ARKANSAS
LOUISIANA
Principal Islands of HAWAII
SCALE 1:7,500,000
VISITOR ORIGIN
BY
COUNTIES
HENDERSON 80
COUNTIES
AS OF JULY 1, 1967
Albers Equal Area Projection
SCALE 1:7,500,000
180°
95°
90°


DOUGLAS
KLAMATH
LAKE
SISKIYOU
MODOC
SHASTA
LASSEN
TEHAMA
PLUMAS
BUTTE
EL DORADO
TUOLUMNE
MARIPOSA
MERCED
FRESNO
TULARE
KERN
SAN LUIS OBISPO
SANTA BARBARA
VENTURA
LOS ANGELES
ORANGE
PACIFIC OCEAN
IOWA
MISSOURI
ARKANSAS
LOUISIANA
LAKE MICHIGAN
29
27
53
Principal Islands of HAWAII
SCALE 1:7,500,000
VISITOR ORIGIN
BY
COUNTIES

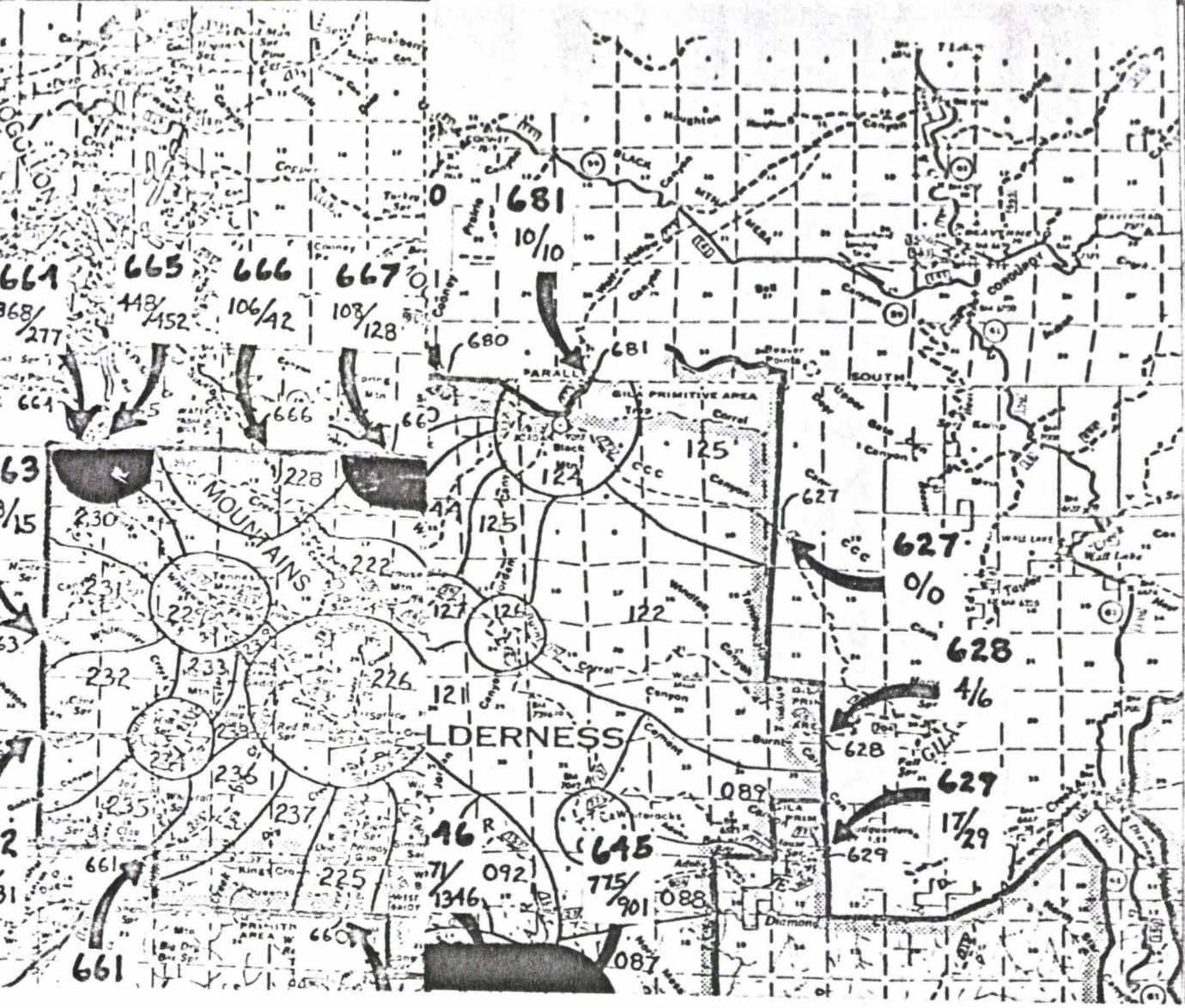
The third circle represents use received within 300 miles; 6608 people came from this area and represents 73% of the total use. In other words, the 73% of the use received in the Gila Wilderness comes from the public that lives within 300 miles of the Wilderness.

One conclusion suggested by this first analysis is that energy shortages and higher travel costs are unlikely to reduce wilderness use significantly (Hendee, Stankey and Lucas - Wilderness Management - 1978). It also suggests to managers the distance they need to reach out by the means of mass media to contact potential Wilderness users. Managers need to bear in mind that the Wilderness is a National treasure; however, the majority of the using public (73%) is within six to eight hours' driving distance.

The second area that will receive our attention is that of visitor entry and exit points. Entry and exit point use, expressed in number of people, has been mapped (Exhibit 3). The use is displayed as a fraction; the entry point use is the numerator and the exit points use is the denominator. Similar use levels were grouped into homogenous zones and color coded. The heaviest use area is Gila Center (entry/exit points 645, 646, 647, 748, 649, and 650). This area accounts for 59%/61% of the total use. The second heaviest use area is Willow Creek - Snow Lake (entry/exit points 669, 670, and 671) with 13%/13% of the total use. The third heaviest use area is Whitewater Creek (entry/exit points 664 and 665) with 9%/8% of the total use. The fourth heaviest use area is Silver Creek - Sandy Point (entry/exit points 667 and 668) with 5%/3% of the total use. The fifth heaviest use area is Turkey Creek (entry/exit points 655 and 666) with 3%/5% of the total use. The sixth heaviest use area is the Sapillo (entry/exit points 651 and 652) with 3%/2% of the total use. The remaining entry/exit points not grouped into areas show only minor use.

The areas identified on Exhibit 3 conform to administrative boundaries. In an era of austerity type budgets, managers should take advantage of this information in planning for facility development, information dispersal, wilderness patrol activities and trail maintenance scheduling. Managers should also seek methods to spread the entry/exit point use from the higher used areas to lighter used areas; publicizing lighter entry/exit point use would be one method.

The third area that will receive our attention is that of day use in the Wilderness. Day use is defined as a wilderness visit without an overnight stay. Day use was calculated for each travel zone and then grouped into homogenous zones where travel zones exhibited similar use levels (Exhibit 4).


681
10/10
661
665
448/452
666
106/42
667
108/128
680
681
PARALL
GILA PRIMITIVE AREA
SOUTH
MOUNTAINS
125
122
627
0/0
628
4/6
628
627
17/29
629
645
775/901
088
087
092
1346
661
661
666
667
228
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222
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121
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227
LDERNESS

EXHIBIT 3

Day use visitors in general are not as disturbing to the Wilderness resource as are users whose visit entails camping overnight; however, the day use even when light produces substantial impacts. Day use activities are not wilderness-dependent; they are, however, roadless-dependent. As such, day users can be accommodated on similar areas of non-wilderness lands. Day use in the Gila Wilderness appear to be influenced by the recreational opportunities offered outside the Wilderness. Four concentration day use areas can be identified from Exhibit 4: Area one - travel zones 091, 092, 095, and 246; Area two - travel zones 98, 99, 100, and 102; Area three - travel zones 174, 180, 182, 192, 195, 196, 197, 198, 199, and 200; and Area four - travel zones 222 and 228.

Area one is closely associated with the Gila Visitor Center, Gila Cliff Dwellings National Monument and Scorpion Campground. Area two is closely associated with private recreation developments on private land, dispersed camping areas Grapevine and Forks, and road access to the East Fork of the Gila River. Area three is closely associated with a recreational subdivision at Willow Creek, Ben Lilly and Gilita Campgrounds and Snow Lake. Area four is closely associated with Whitewater Picnic Area and the Catwalk Interpretative Trail. It is proposed that a portion of the present day use could be channeled to alternative non-wilderness settings offering similar opportunities through an intensive recreation opportunity information program. Those present wilderness users desiring a recreational opportunity in a roadless setting could be satisfied if these users were made aware of the opportunities open to them.

Any non-wilderness - dependent use channeled to alternative areas would improve the quality of the experience for wilderness - dependent users by reducing the social impacts (i.e., encounters with other wilderness users).

The Wilderness permit computer analysis does not display the day user activities; however, the pattern of use as displayed on Exhibit 4 suggests that day use is associated with fishing activities. The heavier day use area (51 people plus) either contain a fishable stream or are a travelway to a fishable stream. Increasing the fishing opportunities in the Wilderness by reestablishment of the Gila Trout in non-productive streams and/or rescinding the present closed season on this species would tend to disperse day use to more lightly used areas. Another opportunity managers should consider is to offer roadless stream fishing opportunities in areas outside the Wilderness.

The fourth area to receive our attention is that of total wilderness visitor use (i.e., overnight use plus day use). Total wilderness visitor use was calculated for each travel zone and

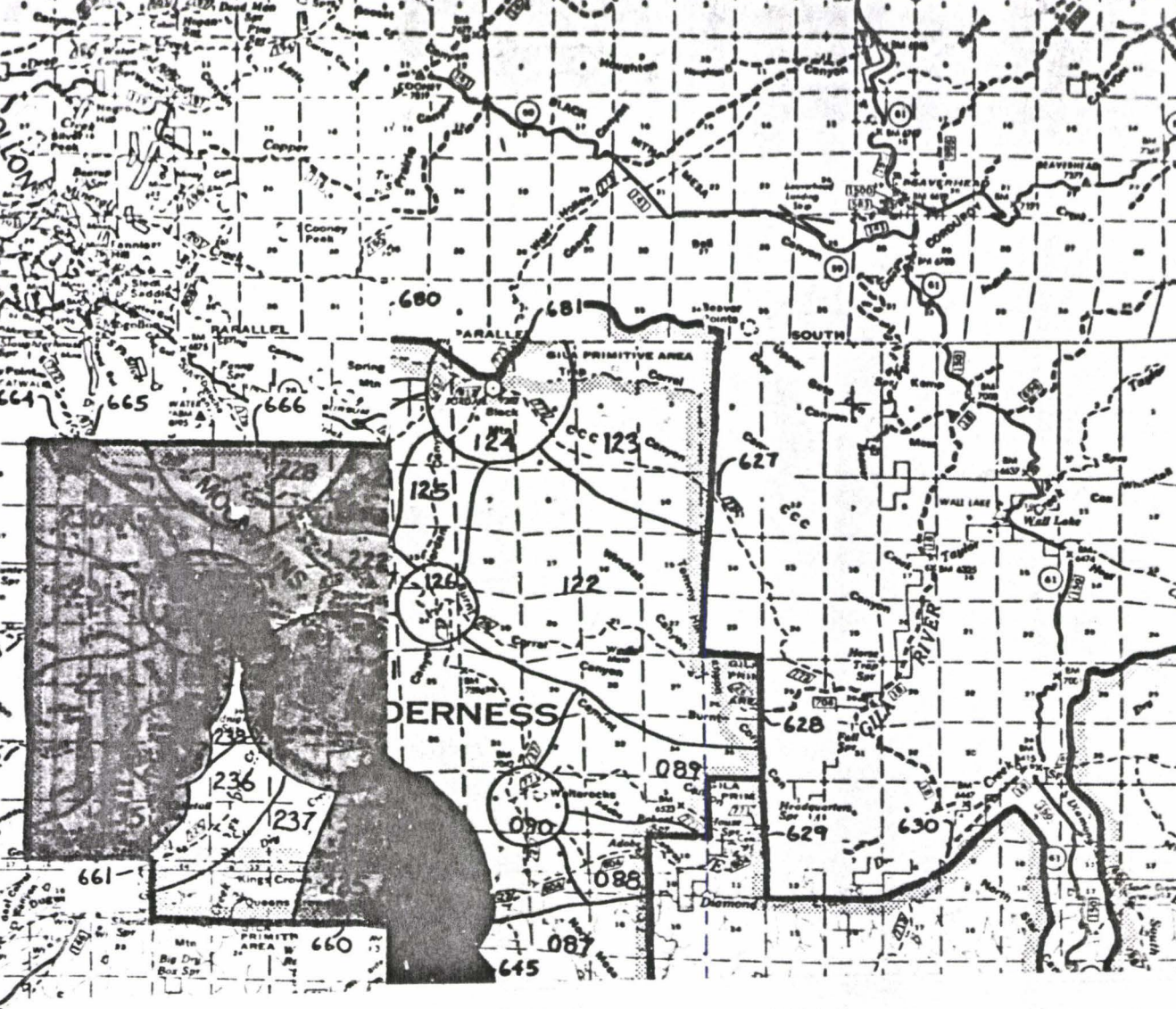
680
681
PARALLEL
SOUTH
GILA PRIMITIVE AREA
665
666
664
123
125
126
122
627
628
629
630
089
090
088
087
645
661
660
236
237
238
228
222
MOUNTAINS
DERNESS
GILA RIVER
Wall Lake
Diamond
Mountain
Big Dry Box Spr

EXHIBIT 4

then grouped into homogenous zones of use (Exhibit 5). The use mapped in Exhibit 5 is expressed in number of occurrences. An occurrence is the presence of one person in a travel zone for all or a portion of one 24 hour period. Occurrences are a measure of the possibility of encounters with other wilderness users and as such, are a useful measure when attempting to establish or calculate social impacts of visitors.

Relating occurrences to actual encounters that one can expect on an average day during the primary use period (May - September) is difficult. By interviewing Wilderness patrol persons and using social setting definitions contained in Recreation Opportunity Spectrum Handbook, a rule-of-thumb approach was calculated. For those use zones receiving 0 to 3200 visitor occurrences, one can expect to encounter less than six single or groups of wilderness users. For those use zones receiving more than 3201 visitor occurrences, one can expect to encounter more than six single or groups of wilderness users. This approach is especially helpful when attempting to apply the Recreation Opportunity Spectrum to the Wilderness. Keep in mind that outside the main use season (May - September) encounters with other Wilderness users will be less than six except for travel zone 191 in and around Gila Center.

Exhibit 5 vividly displays homogenous level of use. As one would expect, use is concentrated in and around water sources. Perennial live flowing streams appear to be the most popular attraction. There are large areas of the wilderness receiving very light use. These lightly used areas contain water sources and trails and offer a high degree of solitude.

To meet the wide range of needs of Wilderness visitors, managers should seize on the information portrayed in Exhibit 5 and disperse this information to Wilderness users. For example, a wilderness planning brochure could be prepared displaying various levels of solitude, trail information and water availability; wilderness visitors armed with this information could then better plan their trip to acheive their wilderness expectations. This example is one of many uses Exhibit 5 can be put to and hopefully this one example will encourage innovative managerial actions.

Exhibit 5 should suggest to managers the areas they need to monitor to assure that wilderenss management objectives are being met. It also should suggest more efficient use of limited funds and manpower to meet wilderness objectives.

The fifth area to receive our attention is camping areas (Exhibit 5). Camping occurrences were calculated for each travel zone and then grouped into homogenous zones. Camping occurrences are where wilderness visitors camped overnight; one wilderness user camping one night in a travel zone would show as one occurrence whereas, a group of three wilderness users camping in a travel zone for three nights would show as nine occurrences. This simple analysis visually displays wilderness user overnight camping patterns.

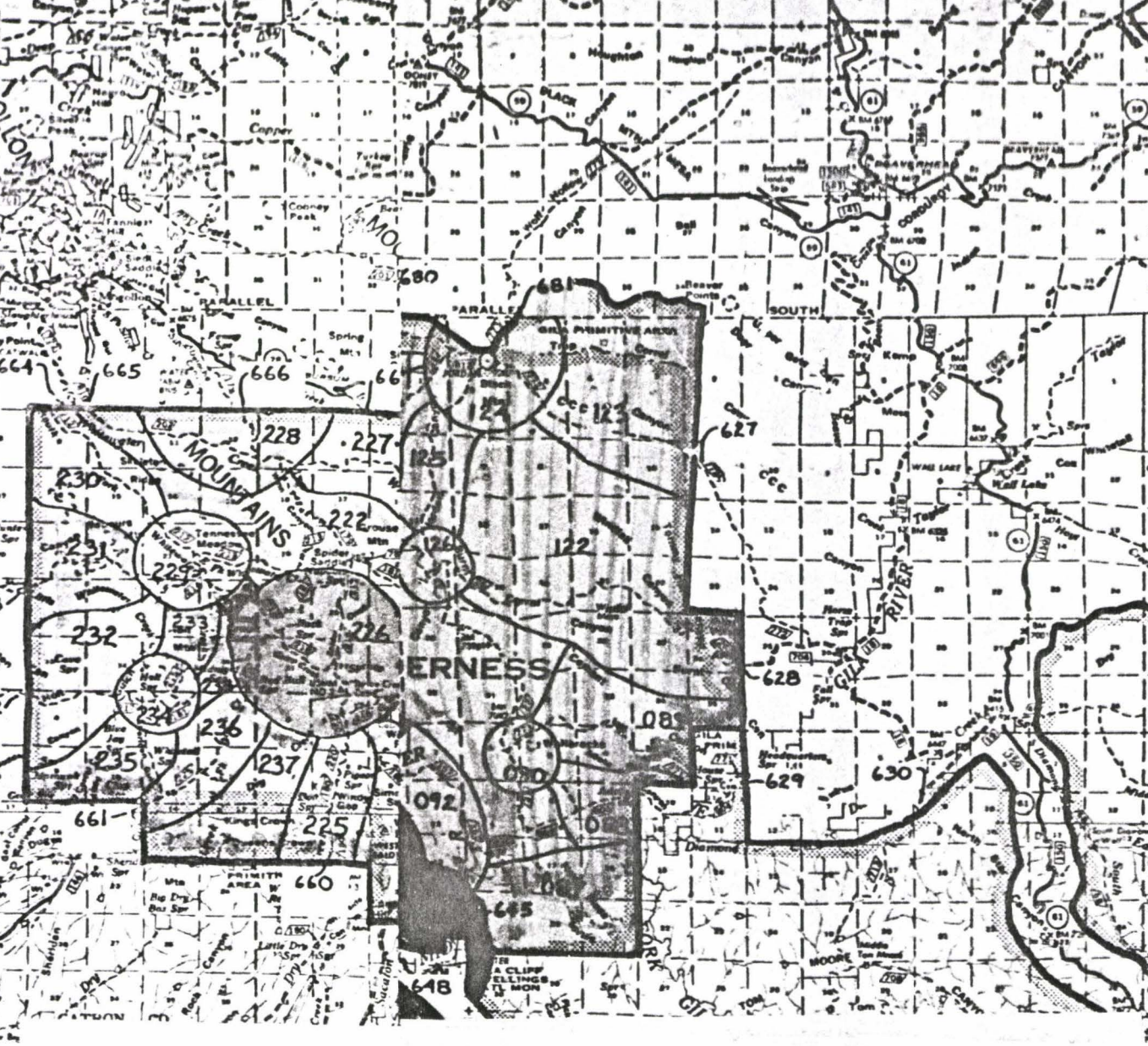
MOUNTAINS
ERNESS
GILA RIVER
SOUTH
PARALLEL
PRIMITIVE AREA
MOORE
665
666
680
681
627
628
629
630
660
661
645
648
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EXHIBIT 5

Wilderness campsites play a very important role in Wilderness management. Resource damage or alteration of natural conditions pose problems to managers. Visitors congregate at campsites, sometimes in large groups for long times, and extensive areas can be drastically altered. Research indicates that campers at wilderness lakes spend about 60 percent of their time right in camp, which suggests the potential for resource damage (Hendee, Clark, and Dailey - Fishing and Other Recreational Behavior at High Mountain Lakes in Washington State - 1977). Although not supported by any studies, field observations indicate that the same visitor behavioral patterns experienced around wilderness lakes hold true for the Gila Wilderness. To complicate the picture even more horse users prefer camping areas with open, relatively level pasture and water close by. These types of areas are not abundant in the Wilderness and what areas are present receive heavy grazing use especially in the fall of the year during big game season - bear, elk and deer. Wilderness campsites do play an important role and managers should be especially concerned of the alternations of natural conditions resulting from campsite impacts.

The present pattern of campsite use as shown on Exhibit 6 is probably influenced considerably by information provided by District personnel, handouts, maps and by the users' past experience; this has tended to concentrate use in only a few areas. We ourselves, the on-the-ground managers, have certain locations that have become recognized as campsites either through administrative actions or through habitual use. These popular areas need to have use directed away from them to more lightly used areas. Managers should explore use of maps and brochures, inventory of potential new campsite locations and Wilderness Rangers to redistribute use.

Exhibit 6 only reflects camping use for the whole travel zone. Travel zones exhibiting the same use level can vary drastically as far as the impacts are concerned. For example the camping use received in travel zone 205 is confined to two acres while the same amount of use is spread out over 160 acres in travel zone 180. This should alert managers of the need for a reliable inventory of campsite and the level of impacts; Code - A - Site is a system that should receive serious consideration. Field tests indicate that it takes from 5 to 20 minutes to code each campsite, depending on the data desired and the training of data collectors. Wilderness Rangers could serve as data collectors as they go about their normal duties.

The sixth area to receive our attention is the mode of travel used by Wilderness visitors. Use is expressed in numbers of people by their primary mode of travel. A simple bar graph is used to graphically display this use (Exhibit 7). A second bar graph (Exhibit 8) is used to show the number of pack and saddle stock or water craft that were used by the public. A fact that managers need to realize is that if administrative

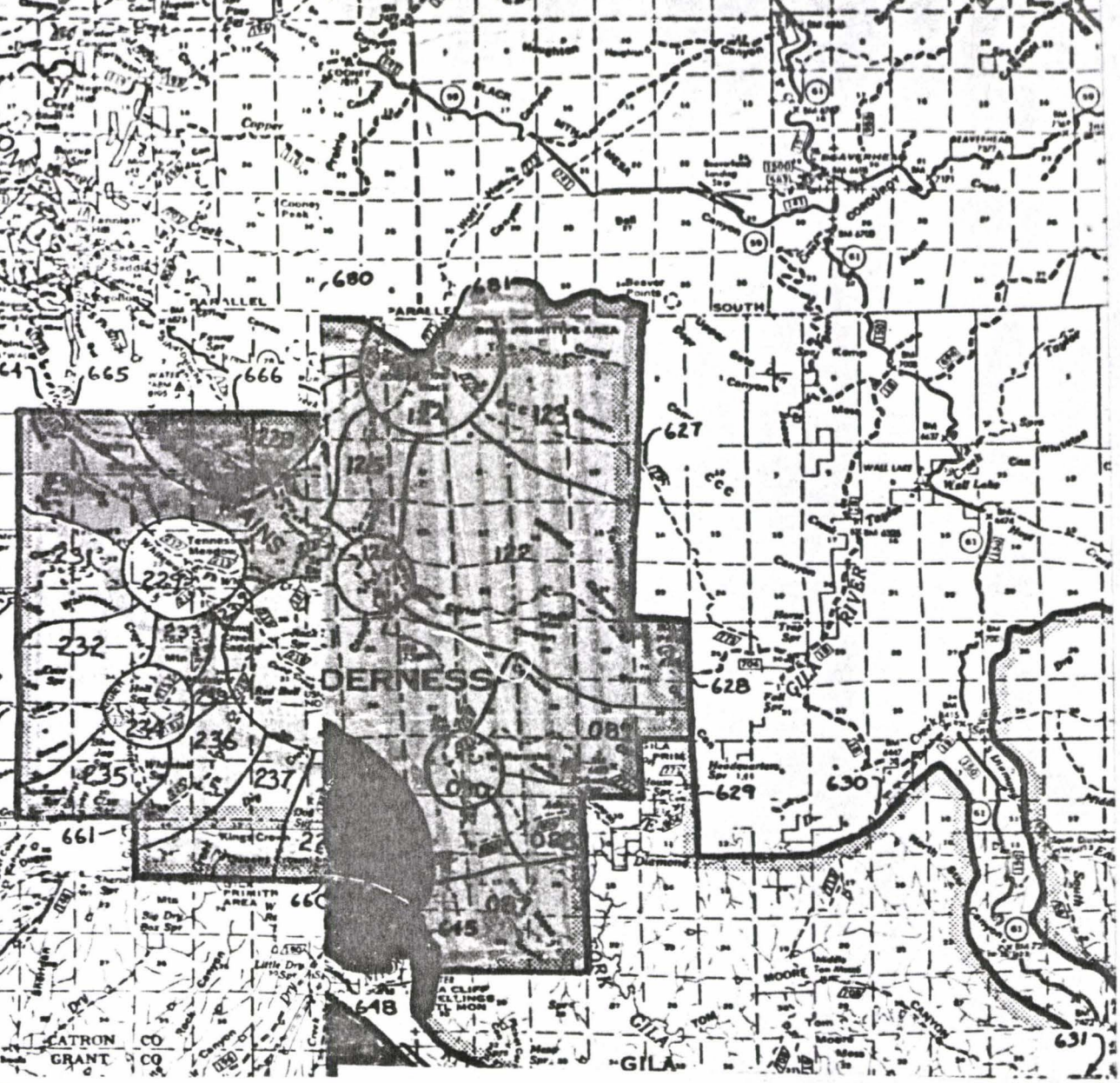
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EXHIBIT 6

horse use in number of animals were plotted along with the public horse use, one would find that our own horse use equals or exceeds that of the public. This indicates that we need to investigate the use of lighter camping gear, lighter foods, use of backpack Wilderness Rangers, or removing trail maintenance responsibilities from the job list of the Wilderness Rangers.

The Wilderness Plan approved in 1976 makes the statement that backpack use (foot travel) probably surpasses horse use. Exhibit 7 not only shows that foot travel exceeds animal use but it exceeds it almost 8 to 1, and this only two years after the plan was approved. The point being made is that estimations based on limited observation can easily lead to faulty conclusions; there is no substitute for reliable use data especially when the use data is used as a basis for critical management decisions.

B. Wilderness Carrying Capacity

As discussed earlier in this report four types of carrying capacity for Wilderness have been identified; physical, facilities, social and ecological. Because of the large land area of the Gila Wilderness and the large number of entry exit points, the physical and facilities carrying capacities are well within acceptable limits; however, the social and ecological capacities appear to be reaching their limits. This analysis will focus on these latter two types of capacities.

Our first focus will be on the social carrying capacity. Social carrying capacity can be defined roughly as the number of visitors that can be put into an area before the quality of their experience is significantly reduced. How do we calculate that magic number of people?

To start, these parameters or variables must be determined: 1) management, 2) experience and, 3) evaluation. The management parameter can be defined in our case as the management objectives and management direction that have been established for the Gila Wilderness (refer back to pages 3-4). The experience parameter is simply determining how the Gila Wilderness visitor perceives the Wilderness. The evaluation parameter can be defined as the criteria for judging when use levels have been exceeded and can be expressed or measured by visitor satisfaction, perceived crowding and standards for the experience. Ideally, Wilderness visitors should be used as a tool to determine the experience and evaluation parameters; but like many of undertakings, the ideal tool cannot be secured and we must use other tools that are not as refined but can be used to start us in the right direction.

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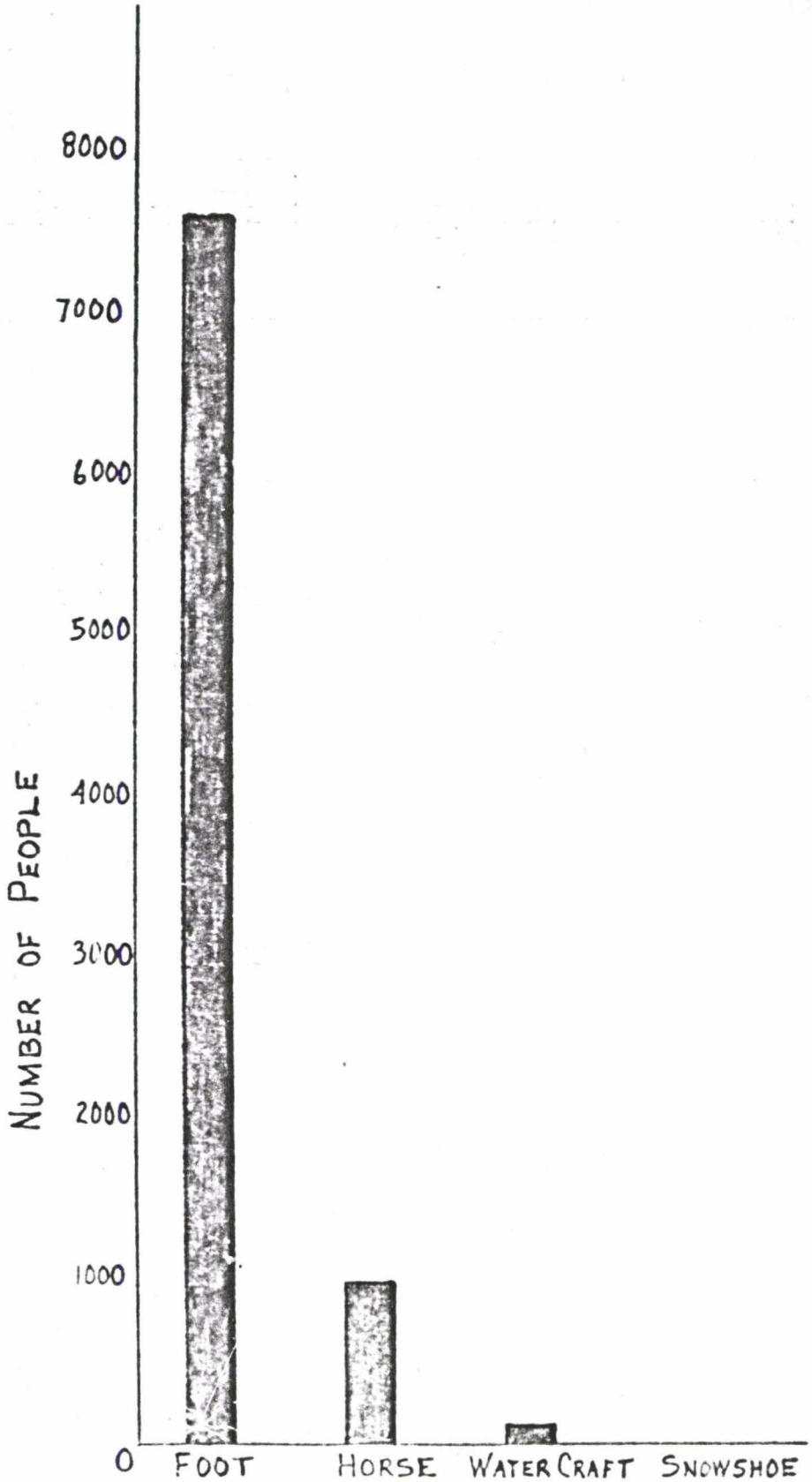

EXHIBIT 7

HENDERSON/80.

NUMBER OF STOCK/WATER CRAFT USED

(DOES NOT INCLUDE U.S.F.S USE)

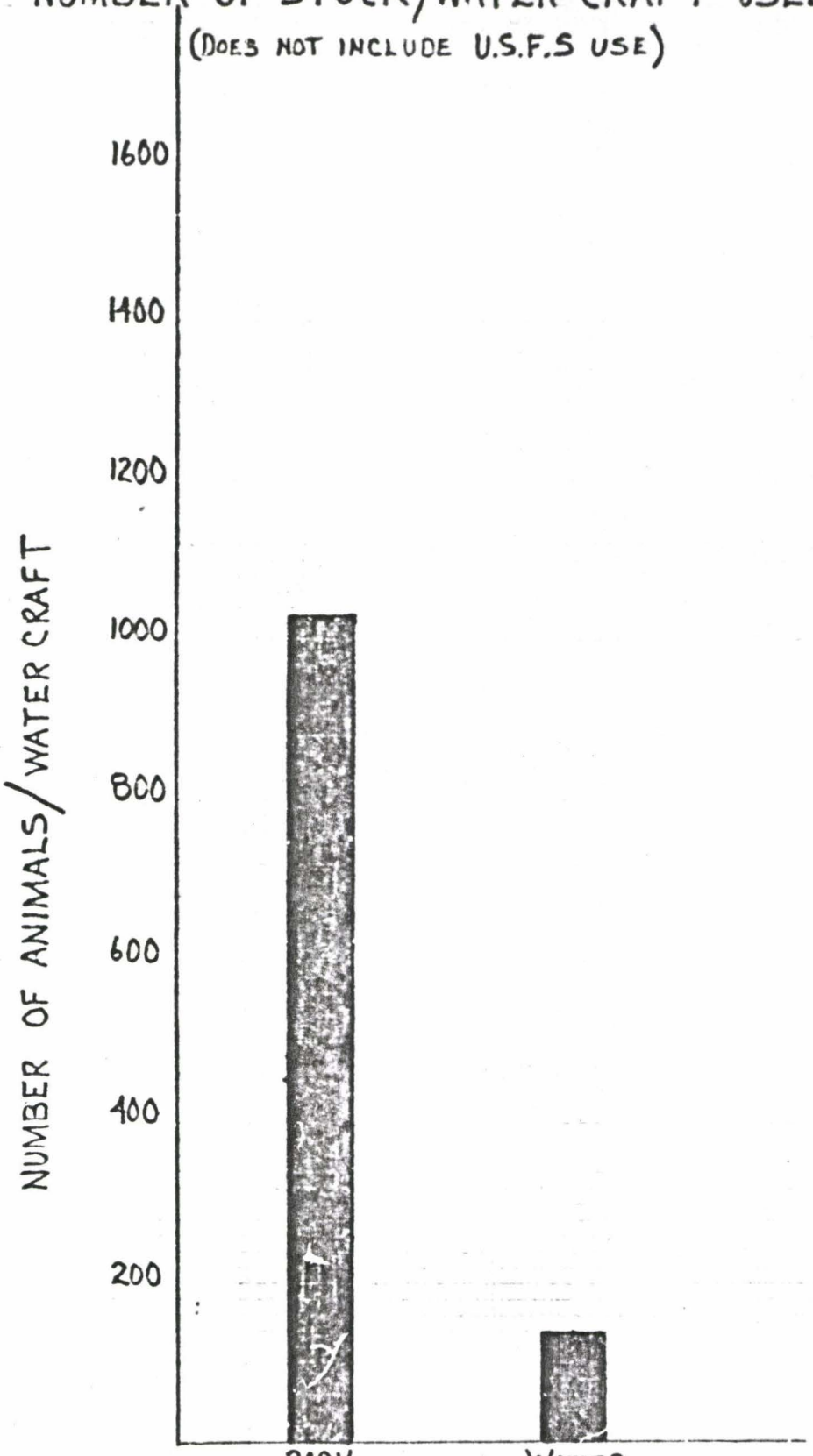

EXHIBIT 8

HENDERSON/80

To attempt to arrive at a social carrying capacity we face a barrier in that we cannot use visitor questionnaires. We can in future years use our Wilderness Rangers to interview Wilderness visitors to secure needed information. It would be easy to lean back and give excuses why social carrying capacity cannot be accurately determined. I cannot accept this and some attempt needs to be made now and improved upon in the future. Any attempt, no matter how crude it may first appear and as long as it moves us forward, is better than standing still and wringing our hands. In our case, we will use the Recreation Opportunity Spectrum, the Wilderness Act, and field observations in the place of Wilderness visitor input to determine the experience and evaluation parameters.

The experience parameter lacking user input can best be established by using wilderness definitions as contained in the Wilderness Act or the experience definitions for the primitive and primitive non-motorized classes contained in the working paper providing field direction on use of the Recreation Opportunity Spectrum. Field observations and informal contacts with Wilderness users suggest that the R.O.S. working paper best defines the experience parameter as viewed through eyes of the wilderness user. We submit the following as the experience parameter: "Extremely high or high probability of experiencing considerable isolation from the sights and sounds of man, independence, closeness to nature, tranquility and self-reliance through the application of woodsman skills in an environment that offers a high degree of challenge and risk."

The evaluation parameter as mentioned before is the criteria for judging when use level has been exceeded as expressed by standards for the experience, perceived crowding and visitor satisfaction. Again, lacking visitor input and using field observation and an intimate knowledge of the on the ground conditions, the size, remoteness, and evidence of man criteria specified for the R.O.S. primitive and primitive non-motorized class will be used to establish the standards for the experience:

> Primitive Standard - To meet this standard an area must be three or more miles from roads or trails with motorized use, be five thousand acres or larger, changes in the landscape are not evident to the average person unless pointed out and changes appear to be unnoticed as viewed by pedestrian observer wandering through the area.
>
> Semi-Primitive Standard - To meet this standard an area must be one half to three miles from roads or trails with motorized use, be two thousand five hundred acres or more in size, changes in the landscape are noticed by the average visitor but the changes do not attract attention, natural appearances of the landscape still remains dominate and any changes would appear to be minor one year following the disturbance as viewed in the foreground.

To establish the levels of perceived crowding the social and managerial criteria as contained in the R.O.S. primitive and primitive non-motorized classes will be used. For the primitive, little evidence of user impacts is present, less than six encounters with other wilderness users per day will be made on trails and less than three other wilderness user parties visible at the campsite. For the semi-primitive non-motorized, moderate evidence of user impacts is present, less than ten encounters with other wilderness users per day will be made on trails and less than six other wilderness user parties visible at the campsite. This criteria ties in closely with reports of perceived crowding received from Wilderness Rangers and occasional spontaneous letters from the wilderness users.

Visitor satisfaction without direct input from wilderness users is not possible in this report. All that can be said is that based on Wilderness Ranger reports and spontaneous letters from users, visitor satisfaction appears very high; however, there is many flaws and fallacies in making this general statement. The one positive statement that can be made with any degree of certainty is that information in regards to visitor satisfaction levels need to be collected, analyzed and established

To conclude our first focus on social carrying capacity Exhibit 9 was prepared for management consideration and use in securing a handle on the elusive concept of social carrying capacity. The basis used to arrive at the outcome can seriously be questioned. No matter what base is used, the determination of carrying capacity is ultimately a judgemental decision (Hendee, Stankey, and Lucas - Wilderness Management - 1978).

Our second focus will be on the ecological capacity. At first this capacity estimate would seem easy to calculate; however, no inventories have been undertaken in the Gila Wilderness to determine levels of environmental impacts or the ability of sites to withstand use. To acquire this needed information the Code-A-Site system is proposed for implementation. Wilderness Rangers could serve as the data collectors as they go about their normal duties.

When information is received on environmental or ecological impacts, the question of what is an acceptable limit of change for wilderness will face managers. This question will be addressed now to assist managers while they are collecting ecological data.

What determines the location of the "Limits of Acceptable Change"? The Wilderness Act does not provide precise information on this point. However, wording such as "generally",

"primarily", and "substantially" suggest some limits should be set. We believe the intent of the Act was to have these limits as close as possible to the natural conditions. But still, the Act does not provide the manager with the specific criteria he needs to set limits.

A change from natural conditions occurs when man uses Wilderness. In actuality, we are dealing with changes in a great number of individual resource elements. The introduction of a particular use into Wilderness results in changes in soil bulk density, amount and variety of ground cover on campsites, vigor of tree growth, rate of soil erosion, and many other elements. Several criteria could be used to determine at what point further change in a particular resource element is unacceptable.

In some situations, it might be decided we cannot accept any change that exceeds the natural range of variation. This option is, in most cases, an impossibility.

A second alternative would keep man-caused change sufficiently limited that a return to a point within the natural range of variation is possible within some predetermined time period, such as the following use season.

The limit of acceptable change might be set as that point where a sudden departure from a natural rate of change occurs. A marked increase in the rate of soil erosion provides an example.

A fourth possibility is limiting change to the point at which it becomes obvious and objectionable to the user. This alternative, however, requires a user input. (Stankey - Wilderness Environmental Quality: Search for Social and Ecological Harmony - 1972).

For the sake of understanding and uniformity in interpretations, the second alternative should be the limit of man caused changes for the Gila Wilderness.

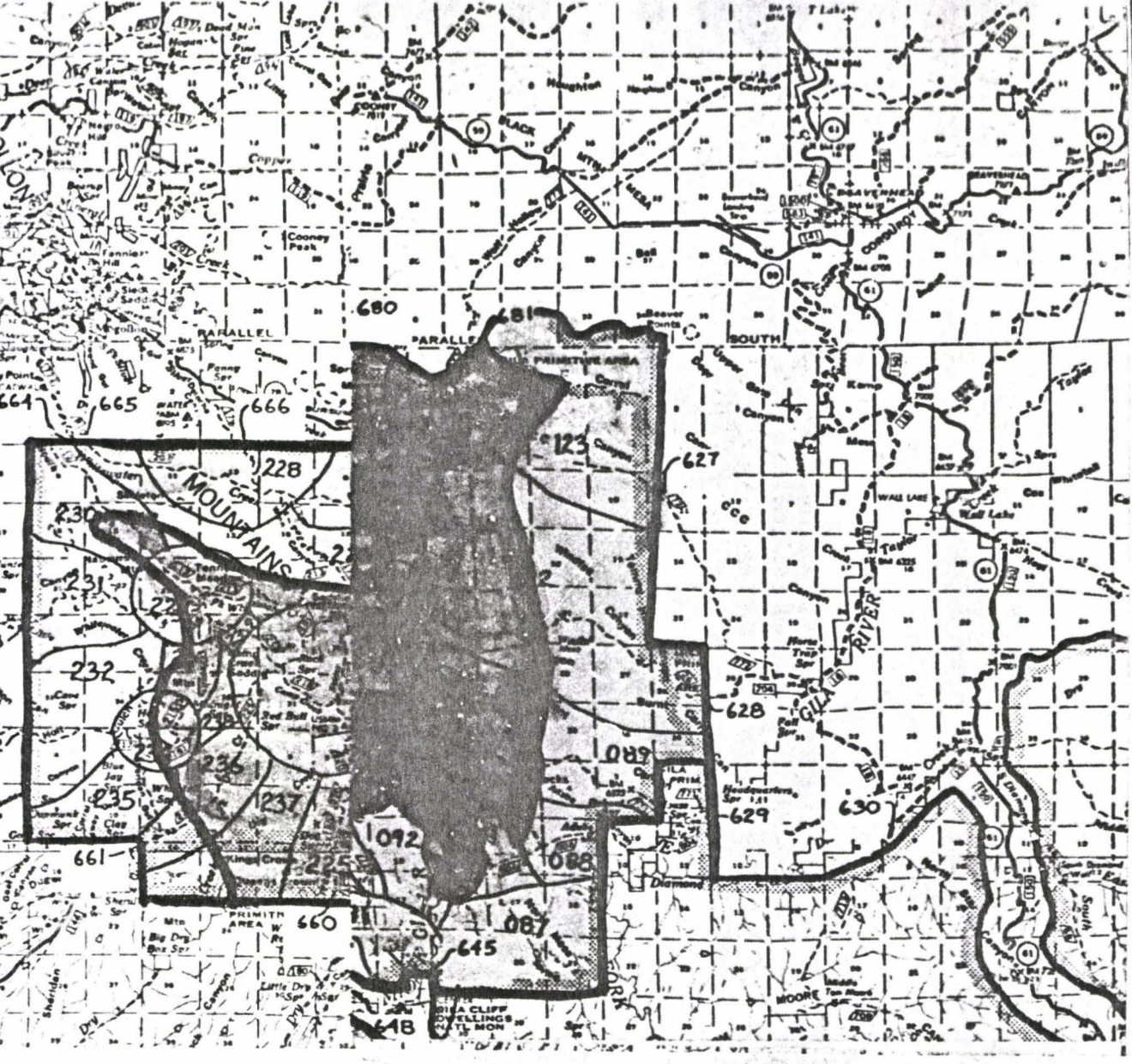
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EXHIBIT 9

V. CONCLUSIONS AND RECOMMENDATIONS

A. WILDERNESS VISITOR PERMITS

The large number of travel zones (247) that were established for the Gila Wilderness, Gila Primitive Area, and the Black Range Primitive Area exceed the limits of the Wilderness Permit Computer Program. For this report, the permits were divided into two parts: first half of CY 78 and second half of CY 78. Not all travel zones were used in these two time periods, thus, allowing the permits to be run. This required that the two halves be manually combined. A simpler approach would be to separate the wilderness permits by area - Gila Wilderness 580, Gila Primitive Area 570 and Black Range Primitive Area 560 - for key punching, storage and retrieval. Using this approach the travel zone limits of the computer program would not be exceeded. It is conceivable that many wilderness users will travel through more than ten travel zones. In such cases, this use cannot be reported and introduces errors into analysis. The only method to correct this problem is to reduce the number of travel zones.

Recommendations:

1. Submit CY 79 use information by area 580, 570 and 560 for compilation.

2. Once CY 79 printouts have been received and using the existing travel zones, prepare a program to combine travel zones so that the total number is reduced by 50%. Care must be used so that information desired by managers is not lost and use levels are not distorted. Test runs will need to be made using the existing travel zones and the new travel zones, and comparing the two outcomes.

The analysis of the visitor origin indicates that approximately three fourths of the Gila Wilderness visitors come from areas within six to eight hours driving time. This suggests that energy shortages and higher travel costs will not significantly reduce wilderness use and that the majority of wilderness users can be reached using established mass media communication channels.

Recommendations:

1. Anticipate static or slight increases in wilderness visitor use.

2. Direct wilderness information to mass media communication channels within 300 miles of the Gila Wilderness.

The analysis of entry/exit point use shows that Wilderness Visitors are using only a few key entry/exit points. This may be brought about by past experiences, poor planning information or our own informational efforts.

Recomendations:

1. Using mass media communication channels promote under-utilized entry/exit points.

2. Upgrade access into under-utilized entry/exit points to disperse use.

3. Upgrade trail head facilities outside of the Wilderness and trail maintenance on trails within the Wilderness that are connected with lightly used entry/exit points for the purpose of use dispersal.

The analysis of day use wilderness visits indicates that this type of use is closely associated with developed recreational opportunities offered on the periphery of the Wilderness and/or closely associated with fishing opportunities. Day use in general is not wilderness dependent; it is, however, roadless dependent. Alternative roadless recreation opportunities need to be identified or enhanced to provide alternatives for the Wilderness day user; any use channeled to alternative areas will promote continued high quality wilderness experiences and postpone wilderness rationing.

Recommendations:

1. Planned future developed recreation sites need to be evaluated in light of their effects on wilderness day use. Any recreation site construction outside of the Wilderness which would increase day use in the present heavier day use wilderness travel zones should be questioned.

2. Recreational opportunities, especially those roadless, need to be inventoried for the Forest as a whole and then made known to the using public to encourage dispersal.

3. Additional fishing opportunities need to be developed both within and outside the wilderness. Stocking additional streams with Gila Trout and removal of this species from the list of threatened and endangered so that the present closure could be lifted would be one way to disperse the present numbers of day users.

The analysis of total Wilderness visitor use (i.e., day use plus overnight use) and wilderness camping use show that use is not evenly distributed and that a few areas receive the majority of the wilderness visitation. Previous visits, word-of-mouth recommendations from friends, lack of planning information and our own well intended efforts contribute to this uneven distribution of use. Some areas that are shown as light use are suspect; these areas, isolated in nature, may be shown as light because of poor permit compliance. Overall an 80% permit compliance rate was estimated based upon Wilderness Ranger field reports; however, some areas because of topography, distance to Ranger Stations and type of user, vary from this overall rating. Suspect areas need to be identified and methods to increase permit compliance need to be initiated.

Recommendations:

1. A planning brochure for public distribution be prepared showing zones of solitude and trail and water information. Solitude could be expressed in degrees based on encounters with other wilderness users. Wilderness visitors could use this information to plan for the wilderness experience they desire. Hopefully, Wilderness visitors will disperse into more lightly used areas and increase their enjoyment of the Wilderness.

2. Forest Service personnel issuing wilderness permits need to be familiar with use patterns to intelligently answer Wilderness visitors' questions.

3. Suspect areas where use is felt to be heavier than reported should be considered for installation of self-issuing permit stations.

4. Yearly wilderness operation and maintenance plans should review use patterns in planning Wilderness Rangers patrol routes, trail maintenance scheduling and permit compliance checks.

5. An inventory of new potential campsites needs to be initiated. This information can be provided to Wilderness users desiring high degrees of solitude.

6. Along with an inventory of new campsites, an inventory of existing campsites along with site specific information is needed to determine where in a travel zone site disturbing impacts are occurring.

The analysis of wilderness visitor mode of travel shows foot and horse use are the primary modes of travel. Foot travel has exceeded horse use by a ratio of approximately 8 to 1. Use of watercraft also appears to be an important mode of travel; however, this mode of travel is dependent on river water levels. 1978 was a good year for floating rivers in that spring water levels were above average. This analysis also suggests that our own administrative animal use in the wilderness exceeds that of the public.

Recommendations:

1. Explore use of horse mounted Wilderness Rangers supplemented by backpack Wilderness Rangers. Duties, distance to be traveled, and appearance need to be considered in the mode of travel selected for the Wilderness Ranger.

2. For administrative use explore use of light weight equipment so that numbers of administrative pack and saddle stock can be reduced.

3. Prepare a planning brochure for watercraft wilderness user stressing safety, minimum water levels for floating, entry/exit points and wilderness ethics.

B. WILDERNESS CARRYING CAPACITY.

The social and ecological carrying capacities appear to be the limiting capacities for the Gila Wilderness. The social carrying capacity was calculated using the Recreation Opportunity Spectrum in place of user input (Exhibit 9). User input is badly needed to upgrade the social capacity estimates. Since user questionnaires cannot be used, a structured question and answer interview system that can be conducted by Wilderness Rangers is proposed. Research publications are available for assistance in structuring the interview system. Additional funding over that now received will be needed to carry this out.

In the interium, the social carrying capacities as calculated and shown on Exhibit 9 should be used. Where current use is approaching or exceeding the capacity, appropriate dispersal techniques discussed previously under Wilderness Permits should be used. The spectre of government control implicated in the regulation of Wilderness visitation has threatening overtones in our society. Most people, including wilderness users as well as many managers, don't like the idea of government restrictions, particularly when they restrict visitation to a category of public land that has been set aside in part to represent the antithesis of urban environments and their omnipresent controls on human activity. Freedom-related values

are basic to the wilderness system as an integral part of the Wilderness experience for visitors. Respect of these values underscores the necessity of applying only the minimum necessary regimentation whenever use restrictions are needed to control visitor impacts (Hendee, Stankey and Lucas - Wilderness Management - 1978).

The ecological capacities for the Gila Wilderness cannot be determined because of a lack of ecological data base; however, to acquire this data base, the Code-A-Site system is proposed. To assist managers as they collect data in determining what levels of change is acceptable, four alternatives were discussed. A limit that is easy to understand and one can be applied uniformily without a great amount of training time should be selected.

Recommendations:

1. Accept the social carrying capacities as shown on Exhibit 9 until user input is received and shows the capacity estimates to be in need of revision.

2. Implement the Code-A-Site system for an inventory of existing campsites, potential new campsites and ecological data beginning in CY 80.

3. Avoid direct visitor restrictions until all indirect methods prove unsuccessful.

4. Keep man-caused change sufficiently limited that a return to a point within the natural range of variation is possible within the following use season.

5. Use appropriate research publications for assistance in structuring Wilderness Ranger interviewing techniques and questionnaires.

C. GILA WILDERNESS MANAGEMENT OBJECTIVES

The Wilderness management objectives and management direction were reviewed in light of this analysis. Only two areas are felt to be in need of strengthening. First, the specific management objectives and visitor management direction speak to establishing visitor capacities. The specific type of capacity should be mentioned (i.e., physical, social, facilities and ecological) rather than the all encompassing term "visitor capacity". Second, the visitor management direction implies a heavy handed use of restrictions. This management direction should be revised so that restrictions are applied only after all indirect management methods have been tried and failed.

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APPENDIX

1. Protecting and perpetuating the wilderness resource.

MANAGEMENT DIRECTION:

a. Functional management plans will be revised by the Ranger Districts and Forest, following approval of this management plan, to assure compatability with and consideration of the wilderness resource.

b. Use capacity will be established in balance with necessary limits required for protection of the wilderness resource. Direction for accomplishment is given under the visitor use section of this plan.

c. The wilderness resource will be given priority over all other resources in resolving problems arising over conflicting uses.

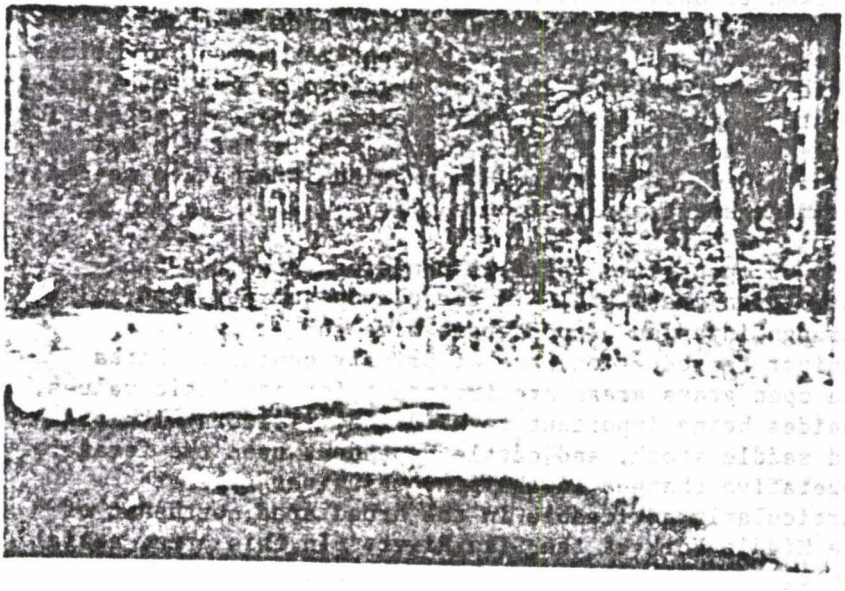
d. Allow only resource uses and activities fostering the perpetuation of high wilderness character.

2. Maintaining natural Wilderness vegetation types.

Retention of natural vegetation types, with minimized influence of man, is perhaps the most difficult task of Wilderness management. Man's influence has resulted in altered plant communities. Wildfire has not been allowed to operate as a natural disturbance factor. Livestock and wildlife use has also created changes in vegetation types, but under present management practices these factors have been greatly reduced. The total interrelationship of factors influencing changes in vegetation types is not known at this time. Additional ecological studies will be necessary to provide information needed for management application.

Loss of open grass parks in ponderosa pine type and large open grass areas in the pinyon-juniper type, through invasion of ponderosa pine and alligator juniper reproduction, are of primary concern. Parks and open grass areas are important for aesthetic values, besides being important to wildlife, visitors with pack and saddle stock, and cattle dependent upon the forage. Vegetative changes in the pinyon-juniper type are particularly noticeable in the broad area northeast of the Middle Fork of the Gila River. In this area, aerial photographs taken during the early 1930's show large open grass areas. As a combined result of overgrazing and control of natural wildfires, these open grass areas have lost their well defined shapes as junipers and pines have invaded.

An open park in the ponderosa pine type with little ingrowth of pine reproduction.



Changing vegetation types, due primarily to control of wildfire and past overgrazing, have resulted in the loss, or reduction in size, of many parks within the ponderosa pine type.

Other vegetation types have also changed in either composition or total area. The aspen type has been greatly reduced in size, due to lack of large burned areas necessary for pure stands of this species. Old aspen stands have generally been naturally succeeded by mixed conifer species. A portion of the ponderosa pine type has changed due to the dense understory stands of pine or juniper reproduction which have grown in.

Fire is a natural component of the environment and played an important role in maintaining a wide variety of plant communities. To restore natural ecosystems, fire must again be allowed to become part of the system, but it will have to be accomplished with caution. Because of past and present intensive fire control, ground fuels have built up to a point where letting fires burn, completely disregarding burning conditions, could be catastrophic. While it can be argued that a completely burned over Wilderness would, in the long term, be natural, the short term results would be undesirable. Consequently, the allowance of natural fires needs to be cautiously done, and the result thoroughly studied and evaluated.

The Jordan Mesa country northeast of the Gila River Middle Fork, where open grass areas are losing ground to juniper and pine reproduction.

MANAGEMENT DIRECTION:

a. Prescribed natural fires will not be controlled during periods of safe burning conditions as described under section M-1, fire control policy.

b. All fires in progress under the prescribed natural fire conditions will be observed to detect possible changes in burning conditions due to changes in weather, fuel type, slope, soils, or aspect.

c. Special weather forecasts will be requested by District personnel to assure continued safe burning conditions.

d. As wilderness pre-attack fire planning is completed by the Forest the use of prescribed natural fires will be implemented. Use of prescribed natural fires will not be practiced on areas lacking a pre-attack plan.

e. A multi-disciplinary team of specialists, knowledgeable in fire control, ecology, wilderness management, and fire management research is recommended to observe fires in progress and to determine associated resource response. This team should also review past burns and their effect on the wilderness resource.

f. District Rangers will document fire behavior, effects upon vegetation types, existing weather conditions and all other information of related value. This data will be included in an inventory of fires allowed to burn and the information used as a guide for future management.

g. Liaison, through Regional fire control personnel, will be established with the Wilderness Fire Planner on the Bitterroot National Forest in Region 1 for the purpose of gathering information which may be applicable to Gila Wilderness fire management.

h. Prescribed natural fires will be allowed to burn where they can be used to achieve desirable ecological effects similar to those that could otherwise be obtained through prescribed burning.

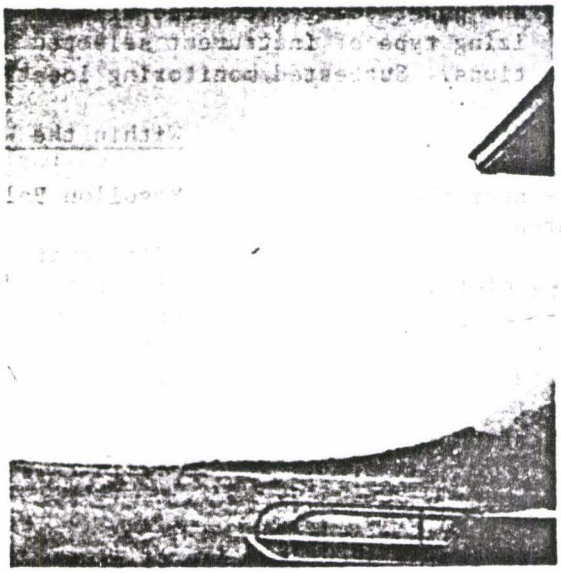
Other factors affecting the natural ecology of vegetation types such as overgrazing by cattle and overuse of specific areas by people are recognized as being partially responsible for vegetation type changes. Management direction concerning these uses is given under the related resource sections of this plan.

B. Air

Wilderness visitors seeking escape from urban living, so often accompanied by air pollution, expect a wilderness experience characterized by broad vistas and clear distant views.

The Gila Wilderness does not always possess these characteristics. Sources of pollution affect the quality of air even though air pollution is rarely widespread over the entire Wilderness.

Although there are no large urban centers close to the Wilderness, the copper smelters at Morenci, Arizona, to the southwest, and at Hurley, New Mexico, to the southeast are both within 36 airline miles. Pollution from these sources varies, depending upon weather conditions. Other types of air pollution from external sources, more temporary in nature, are smoke from wildfires and dust. Both occur during the dry season. Smoke from debris burning, road construction, and range improvement projects is often carried into the Wilderness during periods of project activity. Within the Wilderness smoke from wildfires and dust created by the movement and concentration of cattle, pack and saddle stock, and even people during the dry season, contribute to air pollution.



Air pollution originating from copper smelting in Morenci, Arizona, drifts up the San Francisco River Valley and into the western end of the Gila Wilderness.

1. Air quality monitoring and control

Control of air quality passing over the Wilderness is not entirely within the realm of management ability. Temporary sources of pollution can be minimized to some extent. Air pollution originating from nearby copper smelters poses a more difficult problem. The presence of smelter smoke at times can be determined through visual observation and the detection of the distinct acrid taste or smell of smelter smoke. At Glenwood Ranger Station and Copperas Vista, sulfation plate devices for detecting sulfur dioxide present in air pollution, have been established. These do not give a complete measure of pollution. A more scientific method of measuring degree of air pollution is necessary for support of legislative controls over air pollution and for determining the relationship of various levels of pollution to vegetative damage, if such damage should occur.

MANAGEMENT DIRECTION:

a. Technical specialists from the Forest Service and other appropriate agencies will be requested to determine the type of instruments and number of basic installations needed for monitoring air pollution. Requests for such assistance will be made by the Forest as needed.

b. Access, availability of on-site personnel for servicing, and power source required will be determined before finalizing type of instrument selected and installation locations. Suggested monitoring locations are:

Outside of Wilderness	Within the Wilderness*
On Sheridan Ridge near the Gila Primitive Area	Mogollon Baldy Lookout
On the ridge south of the head of Brock Canyon	*Site available for less elaborate equipment only, or that not requiring power for operation such as sulfation plates.
Near Copperas Vista	
Glenwood Ranger Station	
Black Mountain Lookout	

c. Following determination of proper detection devices and their locations, devices should be procured and installed with servicing scheduled by July 1979.

d. Air pollution or contamination will be recognized and maximum protection of the air resource will be provided in planning projects or activities, both within and outside of the Wilderness.

e. The possibility of air pollution will be presented when providing Forest Service review of environmental statements for external projects.

f. Better distribution of livestock and human use during dry periods will be provided through range management measures and controls over public use.

2. Noise Pollution

Military aircraft flights over the Wilderness, with some breaking the sound barrier, are objectionable to many visitors seeking solitude. Practice flights are considered essential by the military and this decision is not questioned. However, there may be sufficient areas of the Southwest, outside the Wilderness, that are sparsely populated where training flights would be less objectionable.

Flights by aircraft under contract to the Forest Service for fire detection and suppression activities are disturbing to a portion of the visiting public. The impact caused by these flights can be minimized.

MANAGEMENT DIRECTION:

a. A study by the Regional Office on a Region-wide basis, in cooperation with the various branches of the Department of Defense, is recommended for determining the possibility of using alternate areas of nonwilderness for military training flights.

b. Contacts with the visiting public during periods of existing or expected Forest Service contract aircraft flights will include an indication that the noise of low flying aircraft may be encountered.

c. Wilderness flight patterns for fire detection and suppression will be appropriately revised before each fire season, to avoid nonessential flights over main ground travel routes. Contract pilots will be briefed regarding areas to avoid.

C. Minerals

Prospecting and mining in recent years have been primarily at several locations outside of the Wilderness near its western and southwestern edges where claims for fluorspar and associated

precious or base-metals are located. Mineral potential at several locations within the Wilderness could attract increased prospecting activity. Factors which could accelerate mineral activity are increasing world demand for minerals products of all kinds, mining of progressively lower grade ores and increased sophistication of ore finding techniques. These changes could make previously submarginal mineralized areas prime targets for exploration.

Surface rock within the Wilderness, exposed by geologic erosion to a depth of 6000', is entirely of volcanic origin. Additional unexposed depth of several thousand feet is believed to exist. Several areas of abundant and diverse fracture systems located along the western and southwestern portions, may possibly contain minerals of economic value. Igneous rock of Laramide age and older sedimentary rock may also be present below the younger volcanic rocks blanketing the Wilderness.

Geothermal energy resources may exist at depth, as indicated by numerous thermal springs surfacing along the forks of the Gila River, within and outside the Wilderness. Requests for exploration of geothermal energy resources could rapidly develop as less expensive power sources are sought and present energy sources become depleted. Exploration would fall under the Geothermal Steam Act of 1970.

1. Assessment of past activities and corrective action needed.

Eighty to ninety percent of the Wilderness has no mining claims and practically no evidence of possible mineralization. Past prospecting and mining activities have occurred along Big Dry Creek, in the Spider Creek-Spruce Creek area, the Haystack Mountain area, the Holt Gulch-Little Whitewater Creek area, and the Alum Mountain-Copperas Canyon area. Records of past production of minerals from the Wilderness show insignificant volumes of fluorite, gold, silver, lead, zinc, and copper.

Past prospecting and mining may have been limited to some degree by poor access, high costs of removal, low value ores, and unconsolidated claim ownership. Information supplied by the U.S. Bureau of Mines indicates that many prospect holes, adits, tunnels, shafts, open cuts, and trenches remain from old operations. Public safety protective measures required by law have not been applied to most of the old workings within the Wilderness. Number of locations needing either additional protective measures or initial installation is not known.

Areas of past mining activity needing site restoration are very limited. With shaft, tunnel, and trench type mining confined to veins of mineral bearing rock, little surface disturbance occurred. Waste piles, consisting mainly of rock are at most locations confined to small areas. This material generally blends well with the surrounding rugged and rocky landscape.

MANAGEMENT DIRECTION:

a. Using available U.S. Bureau of Mines and U.S. Geological Survey information, locations of past activity will be examined by Ranger District personnel for lack of safety measures which could endanger humans, livestock and wildlife. The target date for completion is July 1976.

b. With the aid of the responsible State of New Mexico Mine Inspector, claimants will be located and compliance with existing safety regulations will be enforced.

c. If responsible claimants cannot be located safety devices will be applied as necessary, using Forest Service funding and personnel.

d. Protective devices for provision of public safety, whether provided by the claimant or the Forest Service, will be designed to harmonize with the wilderness resource. Closing of workings, which can be corrected by blasting, will be handled in this manner. Blasting will be carried out within constraints of State laws.

e. Surface structures, abandoned mining machinery, and site restoration needs on mining claims will be inventoried by Ranger District personnel to determine removal needs or necessary corrective measures. Target completion date is January 1977.

f. Removal of structures and equipment by claimants and needed site restoration will be either encouraged or required, dependent upon whether initial use was prior to or following the Secretary of Agriculture's Regulation of June 3, 1966, requiring the removal of such items and site restoration.

2. Surveillance of future activities

Prospectors, claimants, and miners will be required to comply with pertinent sections of the Wilderness Act and mining laws applying to activities within all wildernesses. Secretary of Agriculture's Regulations concerning prospecting and

mining became law and were included in the Code of Federal Regulations on June 3, 1966. Undoubtedly mining claims have been staked and recorded since June 3, 1966, without giving the required 30-day written notice of location to authorities responsible for Wilderness management. Chapter 36 Part 252 of the Code of Federal Regulations contains new requirements for prospecting and mining regarding the filing and approval of operating plans for activities including the use of motorized equipment, airdrops, and aircraft landings. These regulations will apply as approved.

Areas with past concentrations of prospecting and mining activity could possibly again become active. Economic feasibility of mining lower grade ores and consolidation of claims might bring increased activity.

MANAGEMENT DIRECTION:

a. Claims established after June 3, 1966, without proper notification will be considered invalid.

b. Surveillance, by Ranger District personnel, for future prospecting and mining activities will be concentrated in areas of past activities.

Past geologic history of the Wilderness is not only responsible for suspected mineralization at some locations, but also provided basic rock structures, transformed by geologic erosion into scenic attractions.

c. An area along the western boundary encompassing Little Whitewater Creek and Holt Gulch and another encompassing Big Dry, Spruce and Spider Creeks are designated as management units requiring increased surveillance activity by the Glenwood District Ranger to detect violations of wilderness mining regulation.

d. An area along the western boundary encompassing Minton Canyon, Haystack Mountain, and lower Rain and Mogollon Creeks is designated as a management unit requiring increased surveillance activity by the Wilderness District Ranger, to detect violations of mining regulations.

e. Applications for geothermal leases will be initially rejected on the grounds that geothermal exploration could not be carried out in this area without complete degradation of wilderness characteristics.

f. If a demand develops for geothermal energy in this area, an Environmental Impact Statement evaluating the impacts of the proposal will be developed and submitted with the application.

D. Natural Beauty

Many different combinations of natural beauty exist. Steep slopes and weathered rock outcroppings forming spires and cliffs are pronounced along the deep canyons of main drainages. Varied terrain features from mountain peaks above 10,000 feet elevation to flood plain canyon bottoms, with steep slopes and mesas between, support a wide variety of vegetation types, flowering plants, and wildlife. Climatic conditons vary greatly with aspect and slope.

Protection and perpetuation of natural beauty will generally be provided through management direction applying to the wilderness resource.

MANAGEMENT DIRECTION

1. Maximum protection or corrective measures for restoration of natural beauty will be provided for in management of other resources and planned activities such as structural improvement construction or removal.

2. Cleanup of trash accumulations and removal of structural improvements marring natural beauty will be accelerated. Use of all opportunities will be made to accomplish the needed clean-up.

3. Neat and presentable housekeeping and site maintenance for minimum detraction from natural beauty, at Forest Service and other occupancy sites, will be required of personnel using the sites.

E. Visitor Use

Visitor use within the Gila Wilderness began to rise at a rapid rate during the 1950's and has more than doubled during the past ten years. During 1972 an estimated 22,450 visitors spent over 90,000 12-hour visitor days within the Wilderness.

Use occurs to some degree during all months of the year, but the primary use season runs from May through November. Peak use occurs during the summer months of June, July and August. Uses include fishing, camping, hiking, horseback riding, hunting, and general enjoyment of wilderness environment. Up to the late 1960's, number of visitors traveling on horseback exceeded those hiking or backpacking. Backpacking use has been increasing at a more rapid rate and is now estimated to have surpassed horseback use.

Areas adjacent to trails and where potable water is available receive the majority of use. Rugged and heavily vegetated terrain limits the amount of cross country travel. Forage and available water for both humans and recreation livestock attract visitors to popular travel routes, usually along the larger streams. Damage to the wilderness resource along streams such as the Gila River and its Middle and West Forks, as a result of concentrated visitor use, presents a constantly increasing threat. Available forage for pack and saddle stock is not abundant at many locations, such as along major streams. Competition for forage between cattle and horses does not exist in all areas of heavy visitor use since some of these areas are not obligated for cattle grazing. Additional problems of heavy visitor use are sanitation and prevention of water pollution. Other areas with suitable campsites and forage are used below their capacity because of poor access, lack of water for human or stock use, or lack of knowledge of their existence.

Big game hunting is generally better distributed than other public uses. Stream fishing is a major activity that concentrates visits within heavy use areas. Float trips using tire tubes or rubber rafts on the main Gila River are becoming a very popular form of use.

There are several outfitter and guides serving visitors. Some of these provide only limited guide services, and others provide full outfitter-guide services and rental stock. Use of pack and saddle stock services has not increased greatly, because of the marked increase in backpacking, and the popularity of personally owned stock.

1. Visitor Registration and Use

Use information is based solely upon limited observation and estimation. More accurate knowledge of present use is a prerequisite for determining use capacity for heavy use areas, those believed to be reaching such limits, and other segments of the Wilderness. Actual use must be based on more accurate data than estimates or observations. A complete system of visitor registration, with registration stations installed at all entrance points coupled with double sampling, would yield use information that could be related to observed visitor use and condition of specific area resources. From this information, use capacities for homogeneous areas of the Wilderness could be developed. All present and future trail entrance points will have visitor registration stations, until a permit system becomes a reality.

MANAGEMENT DIRECTION:

a. Standard visitor registration stations will be installed at all trail entrance points prior to January 1975.

b. A card system of registration, using standard registration cards, will be mandatory for all visitors entering the wilderness upon completion of registration stations, or beginning with the 1975 season of use.

c. Travel zones, or areas of homogeneous visitor use, will be delineated by October 1976. This will be done by the District Rangers and Forest Recreation and Lands Staff.

d. From information gathered during the 1975 and 1976 use seasons, coupled with resource condition surveys and observation of use, capacities for each segment of the Wilderness will be determined by Forest personnel by October 1976.

e. Based on these determined capacities for use, each homogeneous segment will be assigned use limitations at or below capacity levels.

f. A mandatory permit system, allowing the gathering of more accurate travel zone use information, will be initiated in 1978 without restricting the use prior to implementing restrictions on numbers and travel routes.

g. Limitations on persons at one time using specific travel zones or length of stay per travel zone will be applied as needed following adoption of the permit system, but not before the 1979 use season.

h. Double sampling of visitor use will be applied during the 1979 summer use season utilizing trail traffic counters for the 35 existing entrance points and six sample days of uptrail interviewing and permit information. This project will be carried out by Forest and Ranger District personnel.

i. Control measures will be taken to assure that visitor use of specific travel zones, including areas without developed trails, does not exceed use capacities. The capacities will be revised following the 1980 use season if necessary.

j. The visitor registration system will be abandoned with initiation of the permit system. Registration boxes will be left in place for gathering visitor comments.

2. Suspected areas of heavy use.

Even though capacities for use have not been determined, there are several specific areas where visitor use may be at or approaching capacity level. These areas are:

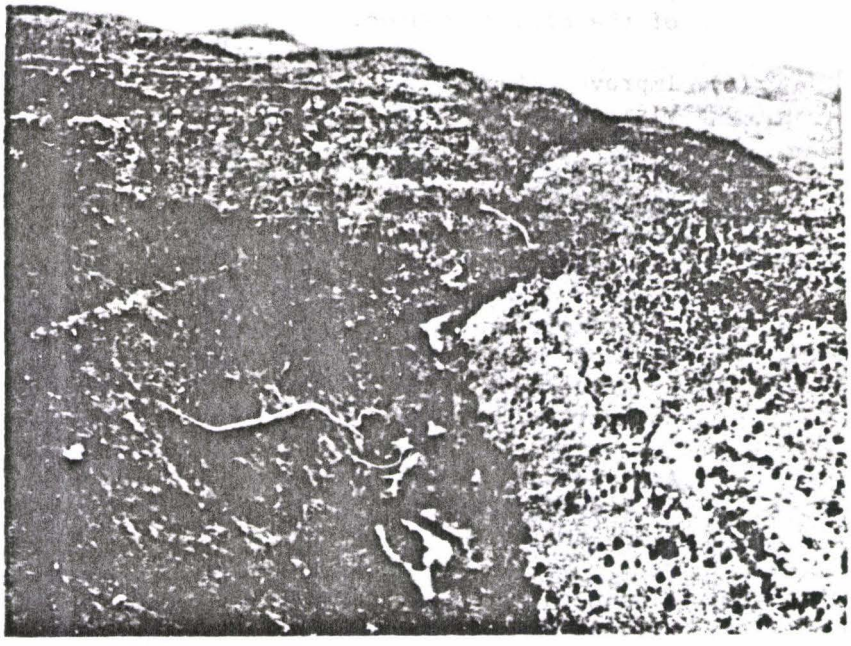
a. Along the Middle Fork of the Gila River from Clear Creek southeast to the boundary.

b. Along the West Fork of the Gila River from West Fork corral to the Cliff Dwellings National Monument.

c. Along the main Gila River from Alum Camp to where it leaves the Wilderness at the southwestern boundary.

d. Along Whitewater Creek from the powerhouse site to Redstone Park, and the Pilgrim Grounds area at the intersection of Spruce and Big Dry Creeks.

The attraction of people to these areas is due to a combination of the aesthetic value of water and the availability of fishing. Each of these areas has been designated as a management unit with specific management decisions applied for the control of use.



Many heavy use sites are confined to stream bottoms where limited space is available for campsite location and pack and saddle stock forage.

MANAGEMENT DIRECTION:

(1) Capacity for visitor use will be determined for these recognized areas of heavy use, or possible overuse, as well as other portions of the Wilderness.

(2) Logical divisions for a campsite rotation system, allowing only portions of each heavy use area to be open to camping during the months of May through September will be determined and applied by District Rangers by May of 1976.

(3) Day use hiking, horseback riding, fishing and other appropriate activities will be allowed during periods of campsite closure.

(4) Sections closed to camping will be alternated on a year-to-year basis, or longer intervals, if necessary. Where necessary areas may be closed to all use.

(5) Campsite rotation restrictions indicating areas closed to camping will be posted by Ranger District personnel at trail entrances to the areas in advance of the closure season.

(6) Improvements will not be constructed for control of visitor use, except for two pole corrals at Redstone Park in upper Whitewater Creek where forage for visitor's livestock is not available, and wilderness resource damage would continue to occur without the corrals. The corrals will be posted with appropriate use restrictions.

(7) All temporary improvements assembled and left by visitors will be scattered or removed periodically by Wilderness Rangers to minimize repeat use of campsites.

(8) Adequate coverage by Wilderness Ranger patrols will be provided to assure that use restrictions are being followed.

(9) Closure of areas to campers will be enforced by Wilderness Rangers.

(10) A study of possible additional restrictions is needed, regarding zoning or limitation of visitor use within the Wilderness to reduce disturbance of eagles and other species of endangered birds of prey wintering along the cliffs in this area. It will be made by the Wilderness and Silver City District Rangers and Forest and Regional wildlife personnel, with recommendations by November 1976.

(11) Wilderness Rangers making contact with visitors will advise the public of suitable campsite locations outside of heavy use areas.

(12) Visitors will be informed of areas closed to camping, through the use of appropriate handouts and news releases.

(13) The effect of campsite rotation on vegetation recovery along stream bottoms will be assessed by District Rangers and Forest range and wildlife personnel after a 3-year trial period.

(14) Controls over use will apply to all visitors.

3. Regulations applying to public use

Regulations are as much for the benefit of the visitor themselves as for the Wilderness or its managers. In order to provide the proper environment for a true wilderness experience, the wilderness resource itself must receive ultimate protection.

MANAGEMENT DIRECTION:

a. To protect the wilderness resource, maximum group size will be limited to 25 persons and/or 35 head of pack and saddle stock, effective during the 1974 season.

b. Advance registration and trip planning will be required for groups of over 10 persons and/or 10 head of pack and saddle stock.

c. Visitors will be required to pack out all unburnable refuse, and to burn or pack out all burnable refuse.

d. New improvements will be provided only where and when they are essential to protect wilderness values or public health.

e. Old remaining garbage or trash dumps will be cleaned up and restored to natural conditions as they are located.

f. Use of dead native plant materials or stone for temporary campsite accessories such as tent frames, tables, and fire circles will be allowed with the stipulation that they be dismantled upon breaking camp. Use of manufactured camp accessories will be encouraged.

g. In contacts with visitors, Ranger District personnel and Wilderness Rangers will stress the need for cooperation in helping in the cleanup of trash left behind by inconsiderate visitors.

h. Temporary electric fence corrals may be permitted for control of horses on a case-by-case basis. Such corrals will be located away from trails passing through the area, and the electric fence will be removed after each use.

i. Water source of questionable potability for human use will not be signed. Wilderness users will be advised that water at all locations may be of questionable quality. This will be accomplished through previsit contacts and by inclusion in handout material available at trail entrance points and Forest Service offices.

4. Improvements needed for visitor support

No recreation improvements exist or will be located within the Wilderness. The corrals mentioned earlier are the only improvements proposed for construction. Recreation developments are located outside of the Wilderness at 15 trailhead entrance points. Only four of these sites have developed overnight camping facilities. Priorities for development of additional trailhead facilities cannot be established until after visitor use capacities have been determined for specific segments of the Wilderness.

MANAGEMENT DIRECTION:

a. Need for improvements is subject to change, and will not be used as a planning base until a capacity for use has been determined for the segments of Wilderness which they are intended to serve.

b. Construction priority will be based on the entire Wilderness, rather than by Ranger District.

5. Float trips on the Gila River

Floating the main Gila River using rubber rafts and tire tubes and a variety of other small craft is becoming a popular activity. Visitors usually start below the intersection of the Gila River and its East Fork, to float the entire length of the river through the Wilderness. This activity is possible only during periods of spring runoff or other times when sufficient water is available.

Grazing allotment boundary fences cross the river at several points. These fences are inappropriate within the Wilderness and, without adequate warnings or means of passage, they are a safety hazard and a hinderance to this activity.

MANAGEMENT DIRECTION:

a. The ultimate objective will be to remove all fence crossings from the river. Each time heavy maintenance or replacement of a fence is required, the management situation will be reviewed to determine if the function of the fence is needed or can be changed to better accommodate other Wilderness uses.

b. Fence crossings that are essential will be temporarily retained with the following restrictions:

(1) Warning signs will be placed at a conspicuous location 300 yards upstream from the fence crossings to indicate the oncoming hazard.

(2) Signs will be similar to wilderness trail signs except that routed letters will be painted to increase clarity. Each sign will indicate the side of the river where the gate is located.

(3) Fence sections crossing the river will be constructed of smooth wire or cable.

(4) Gates will be located out of the stream bottom to reduce maintenance cost due to flood damage and to prevent fence weakening that would occur if they were placed within the stream channel.

c. Efforts will be made to advise visitors when the River is not safe for floating. Low and high waters will be taken into consideration in determining the condition of the river.

6. Public services

Use of commercial services offered by outfitters and guides has not increased in proportion to total use. The main reasons for this are the increasing popularity of pack and saddle stock ownership by individuals, increases in backpacking activities, and perhaps some unawareness of availability of such services. Problems associated with outfitter and guide services are lack of forage for horses, and unavailability of adequate campsite locations.

MANAGEMENT DIRECTION:

a. Continue to permit commercial services provided by outfitters and guides with option to restrict or limit service in line with capacities for visitor use which are to be determined by October 1976.

b. The Forest Outfitter and Guide Policy existing as a part of each permit will be revised to include management direction for operations within the Wilderness. All regulations applying to individuals also apply to Outfitter-Guides.

c. When conflicts might exist between private use and outfitter, the private user will normally be given first consideration.

d. Prior to each trip, the permittee will notify the District Ranger or his authorized representative of the number of people, period of use, location of preferred campsites, routes, and the number of pack and saddle stock involved.

e. Campsite or routes applied for may be disapproved, or alternates allocated, to prevent overuse or avoid conflict with other visitors.

f. Camping gear will not be left at a site if a time lapse of 7 or more days is anticipated before next use.

g. Permanent camps will not be allowed.

h. Hunting camps may be installed a maximum of 5 days prior to use and be removed within 5 days after use.

i. When campsites are dismantled, all equipment will be packed out except for native material, and tent, or corral poles which may be stored out of view from camps, trails, and streams for future use. Campsites will be left in a natural state after use.

j. New or "shortcut trails" will not be cleared or constructed by outfitters or guides and permission for maintenance of existing unmaintained trails must be obtained from the Forest Service.

k. Campsite reservation signing will not be permitted unless authorized in writing by the Forest Supervisor.

l. All temporary campsites, improvements, and premises will be maintained in an orderly and sanitary state at all times. Food caches at temporary campsites will be permissible.

m. Temporary toilet pits are mandatory at campsites and must be located at least 100 feet from live water. Pits must be of sufficient depth to permit covering with at least one foot of soil to ground-level after termination of use. All pits will be currently treated with lime or wood ashes.

n. Cook tents and corrals must be located at least 100 feet from permanent streams.

o. Authorization to graze livestock will be on a temporary basis and will not establish a priority for future use of forage.

p. Pack and saddle stock numbers and period of use specified in the permit may be adjusted as needed for wilderness resource protection.

q. Excessive numbers of stock, over that needed to provide for the number of accommodated visitors, will not be allowed.

r. Grazing of outfitter and guide pack and saddle stock will not be permitted within the West Fork of the Gila River, between West Fork Corral and the Gila Cliff Dwellings, or in the Middle Fork of the Gila River between Flying V Canyon and the Gila Visitor Center.

7. Prevention of violation and action in violation cases

Violations of regulations can be expected at a fairly high rate during the first year or so of application. A certain percentage of visitors will either misinterpret regulations or be misinformed.

MANAGEMENT DIRECTION:

a. Closure of specific areas to camping will be done under coverage of Title 36 CFR 293.3. Request will be made by the Forest Supervisor at least 90 days prior to closure. The Regional Forester will effect the closing.

b. Closure of areas will be given wide public coverage through public contacts, posting at administrative offices and trail entrances to closed areas, and in handout material. This job will be handled by all Ranger District and Forest personnel with public contact responsibility.

c. Enforcement of regulations will be the duty of Wilderness Rangers and other field going personnel.

d. Wilderness Rangers encountering users within the Wilderness will stress pertinent regulations.

e. Appropriate action (notices of violation or warnings) will be taken by Wilderness Rangers where violations are encountered.

f. Wilderness Rangers will dismount from horse when making personal contact within the Wilderness, unless the contactee is also on horseback.

F. Range

Grazing of the Gila Wilderness by sheep, goats, cattle, and horses existed for many years prior to the Wilderness Act and before wilderness designation. This use has been mostly by cattle and horses, but 12,000 head of sheep used the old McKenna Park and Willow Creek Allotments in the central portion of the wilderness. Grazing of sheep was discontinued on these allotments for economic reasons and permits were relinquished. The Glenn Allotment was retired from domestic livestock grazing, through cooperation with the New Mexico Department of Game and Fish in 1951, to reintroduce elk. Approximately two-thirds of the entire wilderness was without domestic livestock grazing obligation at the time the Wilderness Act was passed in 1964. The remainder of the wilderness is grazed by cattle.

Present allotment boundaries, seasons of use, and animal months use for each allotment are shown in Appendix IV. One grazing allotment is completely within the wilderness, and 19 allotments are partially within. A total of 4,881 head of livestock use the wilderness portion of the allotments for an estimated 17,000 animal unit months. There are 20 permittees involved, each with a permit for one allotment.

Early range management efforts reduced livestock numbers and obtained better management to correct past overgrazing. Following World War II, allotment boundary fences and water developments necessary for proper livestock distribution were constructed. Both were difficult tasks in this rugged country. The marginal characteristic of this land for livestock grazing contributed to difficulties. Problems in management still result from concentration of livestock because of inadequate distribution of water and lack of needed fences. Reduction in numbers on several allotments is still necessary.

The objective in managing livestock within the wilderness is to minimize the impact of domestic livestock on the wilderness resource.

1. Grazing management

Management of the forage resource on allotments with permitted cattle grazing will be based on allotment management plans. These plans are being developed from range environmental analysis data, management direction of the Wilderness Management Plan, and evaluation of management alternatives through the environmental analysis and report. Provisions of the allotment management plan will be incorporated into the permittee plan prepared annually by the District Ranger and the grazing permittee.

Updating of present range environmental analyses for all allotments will be completed as rapidly as manpower and finances permit. Completion of this task, along with evaluation of management alternatives will allow updating of all allotment management plans.

MANAGEMENT DIRECTION:

a. Specific coordinating requirements of the Wilderness Multiple Use Management Guide, management direction of the Wilderness Management Plan, and management decisions for allotments designated as management units will be incorporated into allotment management plans.

b. Determine on an allotment by allotment basis the degree and intensity of range management which can be applied and still protect the wilderness values through a proposed allotment management plan.

c. Livestock use will be managed to maintain wilderness values, with minimized impact on the wilderness resource.

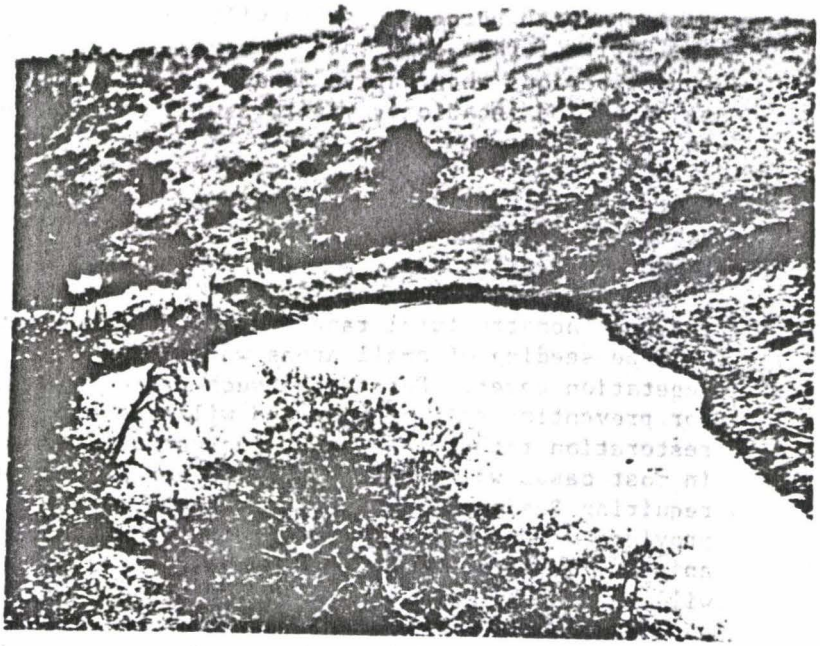
d. Range management plans will emphasize range management practices which minimize the impact of grazing on the wilderness resource.

e. In developing management alternatives for the wilderness range resource, the need to perpetuate or achieve ecological behavior for visitor enjoyment and enhanced opportunity for botanical-ecological study will be fully recognized.

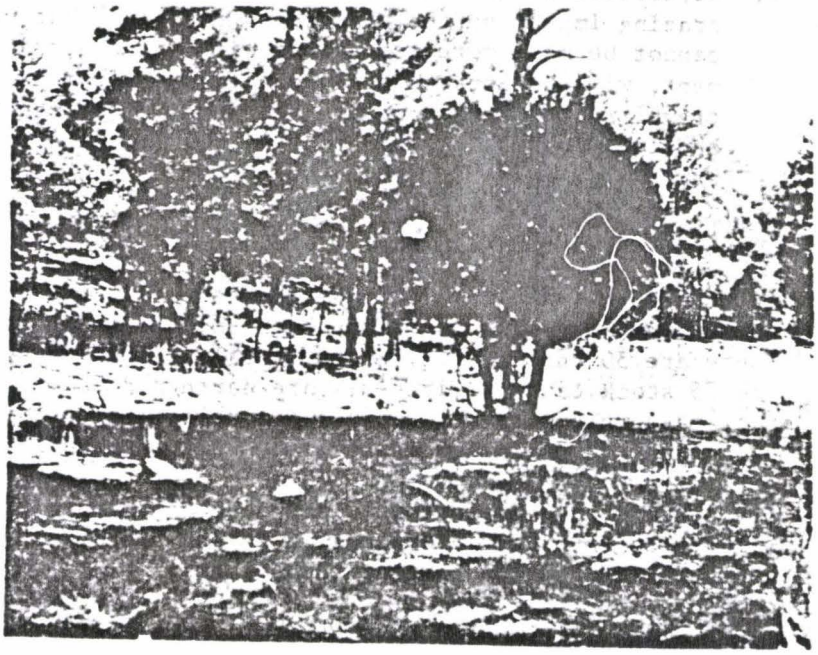
f. First consideration to minimize the impact of grazing on the wilderness resource will be to reduce the numbers gradually so as to trend toward extensive management with less and less reliance on structural range improvements.

g. Salt will be located away from stream bottoms and areas of public use to minimize concentrations at these areas. Salt boxes or supplemental feed boxes will not be allowed.

Fifty-six earthen dam stock tanks have been constructed within the Wilderness. Many of these detract more from the wilderness resource because of associated improvements like fences or corrals.



Maintenance of essential earthen dam stock tanks can be accomplished using mule team drawn equipment.



Fences are all constructed of barbed wire. Most of the fences have metal posts, but a few have native wood posts.

h. Visitors with horses or mules will be permitted to use native forage only when capacity is available. During periods when native forage is not available at specified locations, visitors will be expected to carry their own stock feed.

i. Where possible, water development for range livestock use will include provision for acceptable human or wildlife use.

j. The only nonstructural range improvements permitted will be seeding of small areas which have lost vegetation cover. Purpose of such projects will be for preventing soil erosion and wilderness resource restoration rather than providing forage. Projects in most cases will be less than 40 acres in size, requiring Regional Forester's approval, and will be provided with necessary protection from grazing animals. Where seeding is done, only native species will be used.

k. Stockman's cabins will not be permitted. Corrals for permittee convenience with no value for reducing grazing impact on the wilderness resource will not be allowed.

l. Structural range improvements essential for reducing grazing impact on the wilderness resource, but which cannot be made more compatible with wilderness environment, will be located or relocated away from existing travel routes and known areas of use. Consideration should be given to relocation of either the structure or travel route or portions of both.

2. Existing structural range improvements

Existing structural range improvements total 203 individual units, with 22 of these in the area ungrazed by cattle. There are 50 barbed wire fences, totaling 107 miles. There are 75 stock tanks. Fifty-six are earthen dams and 19 have rock masonry or concrete dams. A complete inventory of structural range improvements is shown in Appendix V.

Structural range improvements are nonconforming with the wilderness resource. Some harmonize and blend with the character of the land better than others.

Some improvements are essential for wilderness resource protection while others, such as a stockman's cabin and a portion of the corrals and fences have no justification and are scheduled for removal. New range improvements are needed at some locations to provide for management that will minimize grazing impacts on the wilderness resource. The need for each structural improvement for management purposes along with removal or replacement information for those subject to such action is given in Appendix V.

MANAGEMENT DIRECTION:

a. Structural range improvements which are essential for wilderness resource protection will be retained. Where possible, replacement with a less obtrusive structure will be accomplished.

b. Essentiality of each structural range improvement will be evaluated whenever heavy maintenance or replacement is required. Consideration should be given to meeting the management need (if it still exists) with other more compatible practices.

c. Improvements nonessential for protection of, or minimizing the impact on the wilderness resource will be removed. Exceptions to this are developed springs which have multivalue for human and wildlife use. Developed springs with an inharmonious type of construction will be reconstructed to a more conforming standard.

d. Earthen tanks destined for replacement by more conforming type water developments, or considered as totally nonessential with no replacement planned, will be allowed to deteriorate naturally.

e. All maintenance or replacement of structural range improvements will be accomplished without the use of motorized equipment, except as approved by the Regional Forester on a case by case basis.

f. Removal of nonessential structures will generally be of higher priority than the replacement of essential structures with an alternate for better blending with the wilderness resource.

3. Proposed structural range improvements

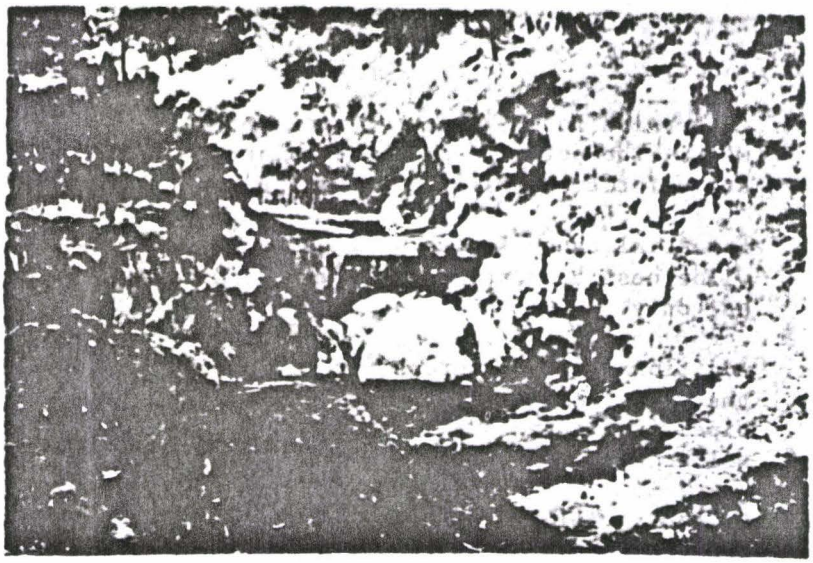
Cattle grazing that adversely affects the wilderness resource is primarily due to excessive numbers and/or improper distribution. Additional water developments will help to minimize the impact of grazing on the wilderness resource where distribution is the problem. Fence construction essential to reduce the impact of grazing on the wilderness resource is necessary at several locations and updating of range environmental analyses may indicate other locations where fences may be required. Complete structural range improvement needs have not been assessed and are pending completion of reanalysis work, and preparation of allotment management plans.

MANAGEMENT DIRECTION:

a. Any new structural range improvements will be for the purpose of minimizing the grazing impact on the wilderness resource.

b. Any new water developments will be designed for maximum compatibility with the wilderness resource. Suggested types include rock masonry dams, rock masonry or log trough spring developments, and rock masonry catchment devices for seep water.

c. New or replacement fences will be designed for maximum compatibility with the wilderness resource, with locations being carefully selected so that travel routes and areas of concentrated visitor use are avoided. Design may be barbed wire, using the type of support which blends best with the immediate wilderness surroundings. At higher elevations, in mixed conifer forests, pole type fences may be used where they blend with the natural setting. Right-of-way clearing will be held to a minimum, removing only brush and small trees under and in the path of the fence. Sections will be tied to natural barriers where possible. Use of motorized power tools will be prohibited. Fence gates will have smooth wire closure loops.



Rock masonry or "rockheader" dam water developments, if properly constructed, offer many years of service without maintenance. Compatibility with wilderness environment is generally good especially in rocky country.

4. Special management units

Several portions of the wilderness where cattle graze require significantly different management than the remainder of the area. The Jordan Mesa Allotment of the Beaverhead Ranger District has special management problems. The wilderness portion of the Dry Creek Allotment, on the Glenwood Ranger District, has little acreage actually suitable for grazing. This has resulted in cattle concentrations in the more accessible areas, seriously damaging the wilderness resource.

MANAGEMENT DIRECTION:

Jordan Mesa Unit

a. The obliteration and restoration work necessary to convert the Green Fly vehicle trail back to trail status, eliminating signs of motor vehicle use, will be determined by the District Ranger by July 1, 1976. This will be followed by application of corrective measures.

b. Reduce stocking to carrying capacity with slack for wilderness purposes.

Dry Creek Unit

a. Conversion to emergency grazing use only will be made. The permittee will be informed of the need and enforcement will be emphasized.

b. Essential range fences will be constructed along the wilderness boundary to restrict this area to emergency use only.

c. Additional water sources for livestock use outside of the wilderness will be provided, utilizing water piped from springs a short distance inside of the wilderness.

d. Criteria will be formulated to be used for determining when the need for emergency use exists.

e. Management measures a, b, c, and d will be the responsibility of the Glenwood District Ranger with planned completion date of 1976.

Former Glenn Allotment

a. During 1976 a joint evaluation, New Mexico Game and Fish and Forest Service, will be made on the former Glenn Allotment to determine feasibility of permitting domestic livestock grazing. The evaluation will include consideration of new laws and regulations.

Wilderness unobligated for cattle grazing

a. Grazing permits will not be issued for these areas.

b. Use of forage by pack and saddle stock will be continued, provided that use capacity is available.

G. Soils

Soils are varied even though all are derived from Tertiary Age rock of the Datil volcanic field. Parent rock materials are mainly Gila conglomerate, rhyolitic ash-flow tuff, basaltic rocks and rhyolite. Exposed igneous lavas and intrusive bodies have yielded a portion of the soils. There are numerous soil types existing within the wilderness, but eight major groupings or soil areas are apparent. Each grouping is composed of soil

types with similar surface and subsurface depths, parent material, herbage and revegetation potential, runoff potential, infiltration and permeability rates, erosion hazard and erodibility.

Some soils generally have moderate or low herbage and revegetative potential. Runoff potential ranges from moderate to high, while infiltration and permeability rate are moderate to low. Erosion hazard and erodibility are moderate at the very best for the eight recognized soil areas and classed as high for most pinyon-juniper areas. Erodibility is a soil function which is determined by the product of two factors. These are the ease of detachment of the surface particles by water and the soil profile characteristics which affect the dispostion of infiltrated water. Erosion hazard attempts to indicate the susceptability of soils to accelerated sheet erosion. It takes into account soil factors such as erodibility and basic erosion rate along with environmental factors such as rainfall intensity and slope. Vegetation destruction by fire, livestock, or other causes could easily lead to accelerated erosion in areas with high ratings for erodibility or erosion hazard. Man-caused soil erosion is not extensively present, but natural geologic erosion is widespread in several of the soil areas.

MANAGEMENT DIRECTION:

1. Proper drainage will be installed on all trails, and if this cannot be done with present trail locations such trails will be relocated.

2. Erosion hazard will be determined by Forest soil scientists before undertaking projects that create bare soil.

3. Ranger District personnel and Wilderness Rangers will be alert for developing situations which could lead to erosion problems. The cause of the problem will be corrected, and soil erosion remedial action will be applied. Treatment may include seeding with native plant species where needed to establish satisfactory ground cover on denuded areas.

H. Tree cover

Most sites are capable of supporting tree growth. Vegetation types are shown on Map II - Appendix XV. Accurate acreages for vegetation types are not available.

The spruce-fir type is relatively small, encompassing only the highest peaks and mountain divides. Major species are Englemann spruce, alpine fir, corbark fir and quaking aspen. The mixed conifer type occurs on moist sites between 9500' and 8000' elevation. Major species represented are Douglas-fir, ponderosa pine, white fir, Englemann spruce and southwestern white pine. This type is below the spruce-fir type on upper mountain slopes and in the upper reaches of canyons. Areas of pure aspen are limited in size and scattered through the spruce-fir and mixed conifer types. Aspen acreage has become reduced partially as a result of the control of natural wildfires, limiting the size of burned areas where this species can become established. Ponderosa pine is the most prevalent vegetation type covering large areas on a variety of different sites. Usually limited to elevations between 8500 and 7000 feet, this type is often broken by patches of pinyon-juniper or dense brush, and by fingers of mixed conifer. Other species besides ponderosa pine, within the type, are Douglas fir, pinyon pine, southwestern white pine, and various oaks and junipers. This type has had the highest occurrence of natural wildfires and received natural tending by these fires. Subsequent fire control has caused changes in stand composition and structures. At many locations the open characteristic of ponderosa pine stands has been lost through ingrowth of dense reproduction.

Lower canyon slopes and mesas support pinyon-juniper vegetation or mixed stands of brush. Here the most common species are pinyon pine, alligator juniper, and several species of oaks. Canyon hardwoods occur along stream bottoms with species such as narrowleaf cottonwood, willows, inland boxelder, netleaf hackberry, Arizona sycamore, Arizona walnut, and Arizona alder.

MANAGEMENT DIRECTION:

1. Cutting of deadwood for fuel, campsite accessories, or other authorized uses is allowed.

2. Cutting of green trees for camp accessories is prohibited.

3. Defacing or cutting on the trunks or branches of live trees is prohibited.

4. The use of trees for the placement of trail directional and regulatory signs will be allowed, provided that such trees are properly positioned and of sufficient diameter for this use.

5. During project work and activities such as trail construction and fire control, timber cutting will be limited to that absolutely necessary.

6. Detraction from the wilderness resource as a result of tree cutting will be minimized through cutting of ground level stumps and disposal of debris by lopping and scattering.

7. Cutting of trees necessary for prospecting and mining activities is permitted with stipulations of individual tree selection to avoid creation of artificial openings, cutting of ground level stumps, and disposal of debris through lopping and scattering.

I. Water

The generally arid conditions of the Southwest have caused inhabitants throughout history to be dependent upon water producing areas such as the Wilderness.

Quantity of water yield is of importance to both New Mexico and Arizona. Average annual precipitation ranges from 14 inches at lower elevations up to 32 inches at the highest elevations. Average surface runoff yield is estimated to be about 65,000 acre feet annually. Flash floods result from high intensity thunderstorms during summer and early fall months.

The excellent quality of most surface water originating within the Wilderness is endangered by possible pollution of waters flowing into the Wilderness. Although stream pollution by visitors is not a serious problem at this time, the potential does exist. Disposal of human wastes, garbage, and trash by visitors, and body waste from livestock are all possible threats to water quality. Water quality monitoring is now being done at selected locations for both bacteriological and chemical samples as shown on Map I - Appendix XV. Sample results have not indicated pollution to any alarming degree.

The Wilderness has a total of 30 permanent streams with a combined total length of 196 miles. The main Gila River and its West and Middle Forks are the major streams. Permanent streams are listed in Appendix VI.

Water sources for human, livestock, and wildlife use, apart from the main streams, have always been limited. The availability of water for consumptive use, more so than its mere existence, is a factor limiting distribution of visitor use. Less than one-third of the 199 known spring locations have ever had any type of development. Most known locations are near travel routes. Areas between trails and including the headwaters of many streams, are believed to contain many more springs and seeps not indicated in this inventory.

1. Maintaining resource quality

MANAGEMENT DIRECTION:

a. Continue collection and analysis of water samples taken at existing quality monitoring points along the Gila River and its tributaries.

b. The need for additonal sample locations will be determined by the Forest Watershed Staffman before 1976, through sampling along major streams.

c. Significant bacteriological count increases, based on repetitive samples rather than an individual sample, and indicating danger of an intolerable degree of water pollution, will require determination of the source of such pollution and application of whatever corrective measures may be required.

d. Endangered water quality will be sufficient cause for adjustments in resource use if such use is the degrading factor of water quality.

e. Visitor use of areas adjacent to live water sources and streams will not be allowed to increase to a point where sanitary waste disposal facilities would be required to prevent an intolerable degree of water pollution.

f. Plan projects involving construction, such as trail work, to minimize the addition of silt to streams and maintain visually clear surface flow of water. Properly locate and drain trails and restore bare soil areas. Creation of mudholes and soil disturbance at crossings must be minimized.

J. Wildlife

The value of wildlife as a factor enhancing the wilderness resource has long been recognized. All native wildlife species are important for their economic, recreation, nature study, and aesthetic values.

Merriam's elk occupied the Wilderness until the early 1900's when they became extinct because of excessive hunting, complicated with severe winters. A total of 254 Yellowstone elk were implanted by the New Mexico Department of Game and Fish during 1954 and 1956. They were released at points on the Gila National Forest where Wilderness stocking would result. The original bighorn sheep of the Wilderness also became extinct during the early 1900's. They may have been either Rocky Mountain bighorns, desert bighorns or both. Rocky Mountain bighorn sheep were released near the Wilderness boundary during 1964 and 1965 by the New Mexico Department of Game and Fish. Some of these sheep and their offspring undoubtedly range within the Wilderness. Estimated population would probably be less than 50 head.

Deer populations reached an all time high in the late 1930's and have dwindled since that time. Present numbers are estimated at 4,500 Rocky Mountain mule deer and 2,000 whitetail deer.

Turkey are found where water is available, possibly totaling over 3,700 birds. Mountain lions elude population appraisal, but perhaps 80 animals inhabit the Wilderness. Antelope and javelina are found at lower elevations near the southwestern edge of the Wilderness. A large variety of small mammals, upland game birds, birds of prey, songbirds, reptiles, and amphibians live within the area during all or portions of the year. Probable species are listed in Appendix VII.

At least 30 native wildlife species merit attention or special effort. Included are the Gila trout, Gila topminnow, Mexican duck, southern bald eagle, and peregrine falcon, all officially classed as endangered by the U. S. Fish and Wildlife Service. These 5 species are protected under the provisions of the Endangered Species Act, P.L. 93-205 of December 28, 1973.

Twenty-five species are considered unique by the Forest Service with more information needed about populations and habitat requirements. These include spike dace, speckled dace, loach minnow, Arizona tree frog, Gila monster, Arizona coral snake, banded rock rattlesnake, goshawk, black hawk, zone-tailed hawk, gray hawk, golden eagle, osprey, prairie falcon, merlin, spotted owl, burrowing owl, whiskered owl, elf owl, spotted bat, Mexican big-eared bat, hooded skunk, kit fox, Arizona gray squirrel and red squirrel.

Native species that have become extinct include Merriam's elk, grizzly bear, Mexican lobo wolf, and river otter.

1. Cooperative Management Efforts

Wildlife population balance with available habitat and food supplies requires continued cooperation between the New Mexico Department of Game and Fish and the Forest Service. Applicable laws covering protection, hunting seasons, and hunting restrictions are under state title except where federal laws protect certain species.

Management of wildlife populations is a responsibility of the New Mexico Department of Game and Fish. Enforcement of wildlife laws is a function of the Department of Game and Fish, with cooperative assistance from Forest Service personnel.

The Forest Service has the responsibility of habitat management and making hunting season and limit recommendations based on habitat condition and population estimates.

MANAGEMENT DIRECTION:

a. Assist the New Mexico Department of Game and Fish in making surveys of game numbers and recommending seasons based on these surveys.

b. Aircraft may be used for game counts provided they do not land within the Wilderness. Counts will preferably be restricted to seasons when visitor use is light or nonexistent.

c. Wildlife transects will be maintained and observations and data collection will be continued. The use of transect reference and beginning and end point markers will continue to be allowed.

d. Cooperation will be given to the New Mexico Department of Game and Fish in law enforcement.

e. Forest Supervisor recommendation with Regional Forester's approval, will be a necessary requirement prior to supplemental implanting of wildlife species by the New Mexico Department of Game and Fish.

f. Big game herd sizes will be limited, through cooperative efforts with the New Mexico Department of Game and Fish, to those which can be supported without damage to the wilderness resource.

g. If a need arises, vector control programs to protect health of visitors will be allowed in cooperation with appropriate State of New Mexico and federal agencies.

h. Predator control programs on a case by case basis of demonstrated need may be allowed, subject to approval by the Forest Supervisor. Trapping of individual offending animals will be preferred. Poison baits and cyanide devices will not be allowed.

i. Stocking of exotic species of wildlife will be prohibited within the Wilderness or at locations outside of the Wilderness where Wilderness stocking may result.

j. On a priority basis assessments will be made to determine the feasibility of re-introducing native species that have become extinct to the area.

2. Wildlife Management Problems

Several problems are involved in applied wildlife management. The yearlong range of deer herds is within the Wilderness requiring a continuous food supply. Both cattle and deer compete for many of the same browse species during much of the year. The wilderness resource could suffer damage as a result of overuse by deer.

Beaver populations along the Gila River and its fork have fluctuated over the years. Dams built by beavers have impounded water, killing minor amounts of associated canyon hardwoods. Willows and cottonwoods are cut by the beavers for food. The beneficial aspects of beaver activities generally outweigh natural detrimental effects. The need for population controls should not be based on isolated damage to vegetation which does not constitute a threat to the wilderness resource.

The most critical problem in elk herd management is maintaining a healthy herd. During the mid 1960's, the incidence of bloodworm (Elaeophora schneideri) in elk in the Gila was discovered. The occurrence of the bloodworm in both sheep and deer had been known since 1934. Blind and deformed elk had been documented in many areas for several years. The connection with the bloodworm was not made until the mid

1960's. Considerable research has since been done by the New Mexico Department of Game and Fish, in cooperation with Colorado State University, to learn more about the life cycle of the bloodworm. Both the green- and bronze-headed horsefly transmit the bloodworm to the elk. Deer are an alternate host, but do not appear to be materially affected. An estimated 90% of the Wilderness elk herd is affected to some degree. The situation results in a 70 to 80 percent loss in calf crop during years of high horsefly populations. A major breakthrough in research has been the formulation of a chemical preparation called Piperazine which can possibly be used to kill bloodworms without injury to the animals. A possible means of introduction is through salt block dosages. Several years of additional research remain in determining proper dosage and the possibility of injurious side effects.

Young elk are particularly susceptible to physical damage caused by bloodworm, and this calf may be totally blinded by a severe infestation.

An undetermined number of feral goats live near Big Dry Creek. These goats, descendents of past escapees from domesticity, have been sighted in limited numbers. Their elusive habits limit detection, but they undoubtedly cause some damage to resources. Being exotic to the area, they should be eliminated.

MANAGEMENT DIRECTION:

a. All work projects and management of resources will consider the well being of all species of wildlife native to the Wilderness.

b. Full cooperation will be offered to the New Mexico Department of Game and Fish in implementing a program for control of the bloodworm within the scope of Wilderness restrictions which may limit type, method, or degree of treatment application.

c. Wildlife requirements will be provided for in the management of areas used jointly by wildlife and domestic livestock.

d. Beaver populations will be permitted to occur naturally.

e. Feral goats will be eliminated.

3. Wildlife Improvements

Structural wildlife improvements include earthen dam stock tanks and springs in the portion of the Wilderness without obligation for cattle grazing. Wildlife use many developed and natural water sources which are also used by visitors and/or their horses. Metal trick tanks with guzzler type water devices are maintained by the New Mexico Department of Game and Fish under special use. They are described in Section R, Land Occupancy.

Nonstructural wildlife improvements include seeding projects after fires and in ponderosa pine type openings, accomplished on a small scale prior to 1965. These projects have not been properly analyzed to determine effectiveness. Two wildlife exclosures are maintained. These structures are fence exclosures used for gathering information about elk range plant composition and densities, and influence of game use upon plant succession and available forage.

MANAGEMENT DIRECTION:

a. Development of additional water sources for the sole purpose of expanding natural wildlife populations will not be allowed.

b. Wildlife drinking devices will be planned for all water developments where this type of use would be compatible with the wilderness resource and other planned utilization of the water.

c. Past seeding projects will be examined by the Forest Range and Wildlife Staff to determine project effectiveness and the related effect upon the wilderness resources. Accomplishment will be made by September 1978.

d. Existing wildlife exclosures will be retained for continued use in gathering information, useful in determining possible changes in vegetation, caused by the elk herd.

K. Fisheries

The attraction of fishing and the aesthetic value of being by or within sight of water causes concentrated visitor use along some streams. There are approximately 165 miles of fishing streams. The lower portion of the Gila River is considered a warm fishery even though trout may be found. Fisheries vary in quality with portions of some streams becoming intermittent during dry years. There are no lake fisheries. Several streams have fish habitat improvement structures, constructed during the 1930's. These are in a varied state of repair.

Stocking has been done by the New Mexico Department of Game and Fish. Past stocking records giving locations, numbers, sizes and species stocked in Appendix VIII.

1. Cooperative Fisheries Management

The management of fisheries is a cooperative effort of the New Mexico Department of Game and Fish and the Forest Service. Stocking is done by the New Mexico Department of Game and Fish with recommendations of streams, species, and size of fish to be stocked being offered by the Forest Service. Special projects such as the perpetuation of the endangered Gila trout, are cooperative efforts of the Forest Service, New Mexico Department of Game and Fish and other fisheries biology experts. Law enforcement connected with fisheries management is a responsibility of the New Mexico Department of Game and Fish with cooperative assistance from the Forest Service. Fish habitat improvement is a responsibility of the Forest Service.

MANAGEMENT DIRECTION:

a. Recommendations will be made to the New Mexico Department of Game and Fish regarding streams to be stocked with hatchery fish. Stocking will be continued at locations stocked in the past.

b. Recommendations for changes in fish species, size, and streams to be stocked will be incorporated into a stocking plan to be prepared in cooperation with the New Mexico Department of Game and Fish. This plan will be prepared during FY 77 and will supersede present stocking policy.

c. Waters now supporting native species will be managed for these species.

d. Trail access may be improved in some cases to increase fishing pressure on under utilized fishing waters, where use capacity allows, thus reducing fishing pressure along streams with overuse. Exceptions will be within trailless areas and to Gila trout streams.

e. Stocking of streams with catchable size fish will not be allowed. Hatchery fish 6 inches plus may be stocked in streams entering or leaving the Wilderness, but only at points outside of the boundary.

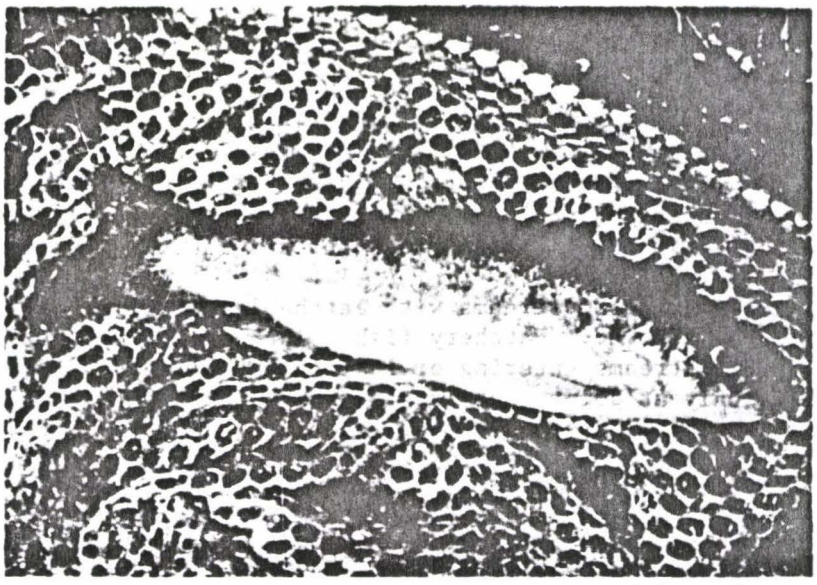
f. Stocking will continue to be accomplished by primitive transport.

g. Fish habitat improvement structures will be inventoried to determine total number, number functioning properly, and number in need of repair at the earliest feasible date.

h. Existing structures in need of repair will not receive maintenance unless they are essential for perpetuating native fish species. Project approval will be on a case by case basis by the Chief.

i. New fish habitat improvement structures needed to create desirable habitat for perpetuation of endangered species will be constructed of materials harmonizing with the wilderness resource. The need for these structures will be identified in the Gila trout plan. Project approval will be on a case by case basis by the Chief.

2. Endangered Species



The Gila trout, once common throughtout the Wilderness, are now endangered and exist within two streams - Spruce and McKenna Creeks.

Gila trout were once native to the entire Wilderness, but are now endangered. The possibility of stocking additional streams with this species exists. Gila trout have been able to survive in Spruce and McKenna Creeks which have natural barriers preventing the upstream movement of rainbow trout and consequent hybridization of the two species. These areas are designated as a special management unit. Other barren streams or streams that could be provided with a rock masonry barrier to prohibit rainbow trout, may be suitable for Gila trout. Gila trout would be a species with unusual appeal, being truly native to this area.

Gila topminnow an endangered fish, plus spike dace, speckled dace, and loach minnow which are unique species, may live within the area. Portions of the lower elevation streams would be likely habitat.

MANAGEMENT DIRECTION:

a. With concurrence of the New Mexico Department of Game and Fish, Spruce and McKenna Creeks will remain closed to fishing.

b. Assessment of fish habitat improvement structure needed for Spruce and McKenna Creeks will be made, and structure needs will be submitted for approval by the Chief. Assessment will be made by the District Rangers and Forest wildlife personnel.

c. Determine total Gila trout populations of Spruce and McKenna Creeks.

d. Seek other streams capable of supporting Gila trout.

e. Streams presently barren of trout species will not be stocked with species other than Gila trout.

f. As approved by the Chief, fish habitat improvement structures necessary for the support of Gila trout will be constructed of materials conforming with the wilderness resources.

g. A plan will be submitted annually to the Regional Forester requesting approval for use of the battery operated fish shocker for making population counts or collections of Gila trout or other endangered or unique species allowing sufficient lead time for approval.

h. Habitat needs and populations of the endangered Gila topminnow, and unique spike dace, speckled dace, and loach minnow will be studied by Ranger District personnel and the Forest wildlife biologist before FY 1977.

L. Antiquity Sites - Prehistoric Indian and Historic

These are sites with historical and archeological significance. Among these are prehistoric Indian pit houses, cliff dwellings, and pueblo sites. Remnants of occupation by settlers and pioneers, such as ruins of old cabins and grave markers, are at scattered locations in several major drainage bottoms. None of these sites are included in the National Register of Historic Places.

Many of the most frequently visited antiquity sites are signed with Federal Antiquity Act signs, warning that vandalism and the removal of objects of antiquity are violations of federal law subject to prosecution. It is suspected that ruins remain to be found at locations seldom visited by man, because of rugged terrain or no trail access.

MANAGEMENT DIRECTION:

1. As sites are discovered, each will be added to the existing inventory.

2. No attempt will be made to restore or protect antiquity sites from natural deterioration.

3. Ruins of settlers cabins will be allowed to deteriorate naturally.

4. Grave markers will be given protection as antiquity sites.

5. Vandalism of historic sites or ruins or removal of objects of antiquity will not be allowed. Essential archeological excavations including the removal of objects of antiquity may be allowed upon approved request.

6. Violators of the Federal Antiquities Act will be prosecuted if apprehended. Wilderness Rangers will schedule checking of antiquity sites for detection of possible violations. They will caution visitors requesting direction to or information about such sites to avoid violations of law.

7. Additional individual antiquity sites or ruins will not be signed or marked. Federal Antiquity Act signs will be posted at each Wilderness trail entrance point, where they can be easily seen by visitors.

8. The Gila Wilderness brochure, to be prepared by Forest personnel during F.Y. 1976, and interim handout material will contain information about protection of antiquity sites. The location of antiquity sites will not be shown on maps available for public use.

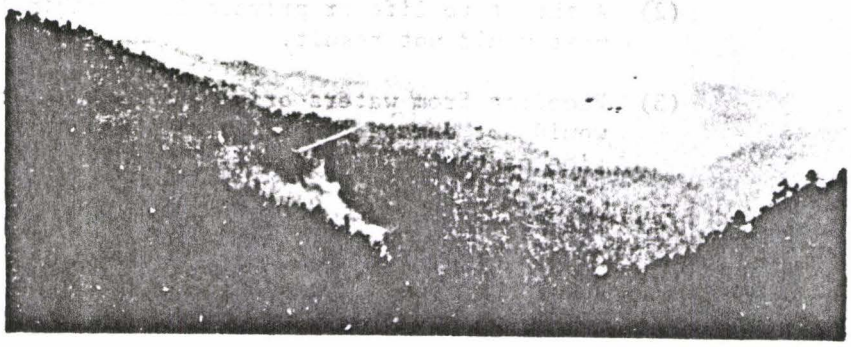
9. The United States Geological Survey will be requested to delete antiquity site locations that are presently shown within the Wilderness on a portion of the U.S.G.S. Quad Maps, prior to reprinting of these maps. A request will be prepared by Forest personnel prior to January 1977.

10. New construction or reconstruction of trails will not be located so that access to antiquity sites is provided.

". Fire Management

Fire was once a natural component of Wilderness ecology. Immediate return to a complete regime of letting fire play its natural ecological role would be unwise. No control of wildfires would result in disasterous fires because of the past buildup of vulnerable fuels. On the other hand, controlling all wildfires perpetuates the continued exclusion of wildfire and its natural effect on vegetation types. Neither extreme would be desirable if the original and natural characteristics of vegetation types are to be restored.

A more logical approach, that would minimize the effect of large destructive fires and at the same time allow safe restoration of vegetation types is believed to be the proper solution.



During the period from mid-June to mid-July, many natural fires occur. Fire load and burning indices are usually extreme, and manning and suppression activities are complex. Wildfires which escape under such conditions have the potential for great resource damage.

1. Fire Control Policy

Fires are suppressed with maximum use of aircraft. A large percentage of fires are manned with helitack crews and a portion by smokejumpers. Air cargo drops of tools and supplies for supplementing ground crews are sometimes made, and air tankers are used for fire retardant drops. Use of aircraft for fire suppression has probably prevented large areas from burning.

MANAGEMENT DIRECTION:

a. The use of aircraft for manning and support of suppression activities will be continued.

b. All fires will be aggressively suppressed when any of the basic Region 3 criteria for prescribed burning by natural fires in Wilderness are not met.

c. Burning by the use of Prescribed Natural Fire will be practiced only on areas having the required fire planning work accomplished.

d. Other basic criteria which must be met are:

(1) Unacceptable air quality conditions will not result.

(2) A threat to life or private land within the Wilderness would not result.

(3) Flooding from waters originating on the burned area would not damage resources of downstream areas outside of the Wilderness.

(4) The fire would not escape from completed and approved preattack blocks.

(5) Escape of fire from the Wilderness would not result.

e. Other criteria for use of natural fire are:

(1) The public must be made fully aware of the program prior to initiation.

(2) Fires allowed under this program are forecast to result in desired natural ecological change.

f. If all other criteria are met, prescribed natural fires may be allowed to burn, under surveillance, when fire danger is at or below the midpoint of moderate and is not predicted to exceed the midpoint.

g. Fires kept under surveillance will be permitted to burn unless the fire danger prescription is not met or one or more of the basic criteria is negated.

h. Fires will be aggressively controlled during periods when immediate suppression is prescribed, but unsightly scars that could be caused by motorized equipment used on-the-ground will be avoided.

i. Motorized equipment authorized for general on-the-ground use in fire suppression are chain saws and lightweight portable pumps. Other types of equipment require case by case authorization by the Forest Supervisor or Fire Control Staff Officer, except that the use of tractors or bulldozers must be approved by the Regional Forester.

j. Control efforts will include burning out from natural barriers, drainage bottoms, and hand lines, or by direct attack with support from air tankers, where possible.

k. All tools and other miscellaneous materials taken to fires by suppression crews or air dropped to suppression crews will be removed from the Wilderness prior to or upon withdrawal of crews from the fire.

l. Wilderness Rangers will not be assigned to fire suppression duties outside their assigned area, and if involved in initial attack within their duty area will be relieved as soon as replacements can be secured. Top priority will be given to securing such replacements.

2. Helispots

Helispots are shown on Appendix Map I. These helispots do not give complete coverage for the use of helicopters in manning fires. Portions of the Wilderness can be manned by smokejumpers which causes less permanent adverse impact on the wilderness resource. Most existing helispots in remaining portions of the Wilderness are essential for suppression manning. Maintenance of those that are essential is necessary for safe helitack operations. On occasion certain helispots have been unavailable when needed because of overgrown vegetation.

MANAGEMENT DIRECTION:

a. All existing helispots as shown on Map I will be retained.

b. Helispot clearing will be sufficient to provide adequate safety for maximum size craft used in helitack manning.

c. Debris removed in vegetation clearing will be promptly disposed of by lopping and scattering, or piling and burning in the helispot opening.

d. Temporary helispots will be constructed only in emergency situations requiring quick delivery or evacuation of personnel.

e. Additional permanent helispots may be added only upon approval of the Regional Forester.

3. Detection

Mogollon Baldy has a fire lookout tower and supporting facilities considered essential for protection of the wilderness resource and National Forest resources outside of the Wilderness. The Black Mountain Lookout is mostly outside of the Wilderness, with only a portion of the tower within the boundary. This site is essential for fire detection system. Several exterior lookout sites are used in conjunction with these. Structural improvements, except for a barbed wire pasture fence, have been removed from the abandoned Grouse Mountain site. Appendix IX lists individual improvements at each detection site within the Wilderness. Observations flights provide supplemental detection.

MANAGEMENT DIRECTION:

Mogollon Baldy Management Unit

a. Use of the site for fire detection purposes will be continued until an alternate means of fire detection, with less impact on the wilderness resource, can provide equal efficiency.

b. The site will be confined to a minimum of space required to effectively carry out its purpose.

c. Site standards appropriate for its Wilderness location will be maintained.

d. Barbed wire fence, 2.25 miles in length, will be removed from the site by FY 1976.

4. Rehabilitation of Burns

During the recent years, large fires have not occurred, minimizing the possibility of damage requiring the rehabilitation of burns. On past occasions, limited amounts of seeding have been done on burned areas with the most recent in the early 1960's. The need for rehabilitating large burns will be based upon the threat to values outside the Wilderness and/or upon the threat to values inside the Wilderness if the burn was mancaused.

Mogollon Baldy Lookout and cabin are essential improvements for fire detection both within and outside of the Wilderness.

MANAGEMENT DIRECTION:

a. Following destructive burns, a burned area survey will be conducted prior to planning rehabilitative measures.

b. An interdisciplinary team will be assigned to make the survey, assessing damage and potential effects, both within and outside the Wilderness. If unacceptable damage is not evident, natural rehabilitation will be allowed.

c. If treatment is needed, only seed of plant species native to the Wilderness will be used in seeding of burned areas.

5. Fire Prevention

Fire occurrence is high with an average of 90.3 detected fires per year over the past 10 years (Appendix X). For the same time period, an annual average of 89.1 fires were lightning caused. Man caused fires have not been a major problem, with an average of less than two per year, even though the period of extreme fire danger and peak visitor use overlap. Low occurrence of man caused fires has probably been a result of extreme caution exercised by visitors and a strong fire prevention program.

MANAGEMENT DIRECTION:

a. Stress fire prevention in public contacts.

b. During periods of extreme fire danger, camp and warming fire permits will be required and smoking regulations will be enforced. If conditions warrant, all open fires will be prohibited, allowing only the use of liquid fuel type stoves and heaters.

c. Posting of fire prevention message signs within the Wilderness is prohibited.

N. Insect and Disease Management

Epidemic stages of insects or plant diseases, capable of widespread damage, have not occurred in recent years. Individual trees or groups of trees have been killed by both, but this is a normal, natural occurrence. Dead trees may remain for a number of years providing habitat for many different types of wildlife.

Insect and disease control has been in the form of detection. The biotic community appears to be well balanced with sufficient numbers of many bird species dependent upon a variety of insects.

MANAGEMENT DIRECTION:

1. Insect and disease control activities will be limited primarily to detection, surveillance, and reporting of existing situations.

2. Applied insect and disease control will be restricted to situations where existence of an entire vegetative species is threatened, or valuable exterior stands of timber are endangered.

3. The potential effect of chemicals, that could be recommended for control of insects or diseases, on Wilderness biota and resources will be given intensive consideration through the Environmental Statement process.

O. Administrative Activities

1. Administrative Sites and Other Improvements

There are two Forest Service administraitve sites. These are White Creek on the Wilderness District and Apache Cabin on the Glenwood District. The Holt Mountain and Little Creek administrative sites have been phased out with removal of improvements essentially complete. The structural improvements at the two existing locations are listed and described in Appendix IX. These sites have been designated as management units.

Storage type rain gauges are located at several points within the Wilderness. They provide information for precipitation records, which have many useful applications.

MANAGEMENT DIRECTION:

a. All existing administrative cabins, pastures, and miscellaneous improvements will be phased out.

b. Scars remaining from nonconforming administrative activities will be obliterated. Included will be the removal of remaining materials from the old McKenna Park airstrip and obliteration of scars caused by tractor travel prior to 1961 on the trails between Willow Creek, White Creek Cabin, and McKenna Park.

c. Maintenance projects will not be planned for existing administrative site improvements.

d. Pasture fences will be removed from the Apache Cabin Administraitve Site during FY 1976 and all remaining improvements except spring developments will be removed by FY 1978.

e. All White Creek improvements will be removed by FY 1978.

f. A study for the possible need for a centrally located storage site for stock feed, tools, and supplies, and to be used only for administrative activities, will be made by Forest and Wilderness Ranger District personnel with completion planned during FY 1978.

g. Retain and service storage type rain gauges.

h. Prototype signs will be allowed for informing visitors of regulations applied to specific areas. Regulations applying to the entire area will be posted only at entrance point locations and not within the Wilderness.

2. Management Personnel Required, and Their Assigned Duties

Detailed plans for on-the-ground activities of personnel will be prepared by Ranger Districts as needed, following a standard format to be decided upon between the District Rangers and the Forest Supervisor.

Personnel assigned to administrative activities within the Wilderness are called Wilderness Rangers, in keeping with a national policy suggesting this designation. Manpower assigned for duties must be sufficient to attain the goals established by this management plan. The Wilderness and Glenwood Ranger Districts have sufficient workload activities to support full time seasonal personnel. The Beaverhead, Silver City, and Reserve Districts require part time coverage during the peak use season. Coverage for the Silver City District and Wilderness Ranger Districts must extend from early spring months to late fall due to longer use period throughout lower elevation country.

Manpower needs are:

Late Spring and Summer Use Season (May 1 through mid-September)

Ranger Dist. Assignment	Number of Wild. Rangers	Area to be Covered	Assignment Status
Wilderness	2	Wilderness/Silver City R.D.	Full time
Wilderness	2	Wilderness/Reserve/Bvhd R.D.	Full time
Beaverhead	1	Beaverhead R.D.	Part time
Silver City	1	Silver City R.D.	Part time
Glenwood	1	Glenwood R.D. and SW edge of Wilderness R.D.	Full time
Wilderness	2	Wilderness/Silver City R.D.	Part time
Glenwood	1	Glenwood & SW Wilderness R.D.	Part time

Part time, indicated in the preceding table, is 3 days or less per week, but assignment may be on a sporadic basis according to needs as they arise. Basis for personnel assignment beyond the indicated periods will be as needed.

MANAGEMENT DIRECTION:

a. One of the two full time Wilderness Rangers assigned to the Wilderness Ranger District must be capable of accepting responsibility for coordinating activities of other Wilderness Rangers, both full and part time. Acting in this capacity, he will be responsible for seeing that work instructions and activities of other assigned Wilderness Rangers conform uniformly to management direction of this plan.

b. Wilderness Rangers assigned duties on more than one Ranger District will be scheduled and financed jointly with arrangements being made cooperatively by the District Rangers involved.

c. Wilderness Rangers will wear the Forest Service work uniform and riding boots when assigned to horseback duties, and hiking boots when on foot.

d. Specifications regarding equipment to be used, training and supervision required, and individual tasks assigned and scheduled will be included in Wilderness Ranger work plans. These plans will be prepared by the District Rangers, with revisions as needed, and with coordination guidelines supplied by the Wilderness Ranger with this responsibility. Plans will be prepared or appropriately revised and coordinated before the beginning of each calendar year.

e. Existing administrative and fire detection site facilities will continue to be used as base locations for Wilderness Ranger activities until they are removed.

f. Scheduled cleanup, trailwork, contact work, and other activities will be accomplished from tent camp locations when such activities are of a distance from developed sites to preclude overnight return.

g. All Forest Service personnel, contractors, and cooperators will be required to hobble, picket or turn loose all pack and saddle stock, except horses needed to wrangle loose stock. These may be kept in an existing corral, temporary corral, or picketed.

h. A policy of "pack in-pack out" for all supplies brought into the Wilderness, and trash created during use, will be required of all Forest Service personnel, contractors, cooperators, and permittees.

i. Wilderness Ranger and crew work camps will be located away from popular public campsites and main trails, and they will be kept as inconspicuous and orderly as possible.

j. When and where the possibility of forage overuse exists and where competition for forage with visitors horses and mules is a problem, supplemental feed will be used by Forest Service, contractor and cooperator horses and mules.

k. Administrative trips by Forest Service personnel will be planned to avoid popular compsites.

l. Take an extra mule on all overnight trips. This mule's pack will be empty each morning and outfitted so that trash and other litter can be quickly loaded during the course of the day. Each night or morning the trash will be crushed for compaction and transferred to a permanent pack, formerly occupied by grain or other used supplies. It can then be packed out of the Wilderness or Primitive Area.

3. Guidelines for emergency search and rescue

MANAGEMENT DIRECTION:

a. The use of aircraft for search and rescue evacuation may be permitted with Forest Supervisor's approval as long as the immediate emergency exists.

b. In emergency situations requiring the evacuation of sick or severely injured persons requiring emergency treatment, or deceased persons, approval may be granted by the Forest Supervisor or his delegated alternate, to land helicopters at existing helispots or other locations where vegetative clearing will not be required.

c. Fixed wing aircraft will not be allowed to land for emergency evacuation of injured or deceased persons.

d. Wilderness Rangers will participate in search or rescue operations and to aid in the transportation of injured or deceased as needed.

e. The use of sling and litter devices, available on some helicopters, may be used for pick up by a hovering craft.

f. Organization of search operations to locate missing visitors or downed aircraft is the responsibility of the County Sheriff's Departments.

g. Law enforcement agencies, including the County Sheriff's Departments, will not provide authorization for evacuation of injured or deceased, involving the landing of helicopters, without the approval of the Forest Supervisor or his delegated representative.

h. In applicable situations, where location of lost persons may cause lengthy air search operations, the services of the International Federation of Rescue Dog Associations may be used for search and rescue operations. Services of this type are somewhat limited in that the dogs can only be used in country accessible by man.

P. Communications

Communications are by radio. Radio contact is satisfactory, with handy-talkies and pack set radios carried by crews, plus pack sets installed in fire lookout towers and aircraft used for fire control activities. The Black Mountain base repeater station located outside of the Wilderness provides an essential link between difficult to reach Wilderness locations and outside base stations.

An "Electronic Site Inventory" for the Gila National Forest specifies that no sites will be developed within the Gila Wilderness.

MANAGEMENT DIRECTION:

1. Fire detection site antennas will be the only permanent communication facilities constructed.

2. Antennas at administrative camps will be temporary.

3. All existing telephone lines and insulators will be removed and support poles will be cut at ground level and scattered.

4. Other nonessential or nonfunctional communication facilities which may exist will be removed.

Q. Information and education

1. Informing the public

Implementation of new management direction requires full cooperation of visitors, and public support, especially at a local level. Cooperation and support can best be gained through an active program of information and education.

MANAGEMENT DIRECTION:

a. Present regulations imposed by this management plan to segments of the public recognized as potential visitors to the Wilderness.

b. Outlets to be used for reaching the public will include news releases; feature stories in publications adaptable for such articles; illustrated programs to groups, organizations and public gatherings; individual public contacts with key persons and others; and handout brochures.

c. Subject matter for public contacts will be aspects of the Wilderness Management Plan such as management direction, policy, and objectives. Special emphasis will be given to regulations which affect the visiting public, and introduction of special management projects as prescribed.

d. Information concerning the necessity of aircraft use during fire season and the possibility of encountering aircraft noise while on trips during this period will be pointed out to visitors.

2. Visitor information services for visitors

MANAGEMENT DIRECTION:

a. Organized VIS activities, such as nature hikes and program presentations, are not compatible with Wilderness. Activities of this type will be restricted to outside peripheral locations where such programs have value for contact with potential visitors.

b. Contact of individuals or groups by Wilderness Rangers or other personnel will be continued. Contacts will offer information about the history or natural features on an informal basis.

c. Interpretive signing is not permitted within the Wilderness.

3. Maps and brochures

The Gila Wilderness Sportman's Map and a prepared handout sheet with limited information about the Wilderness are both used. The Gila Wilderness Sportsman's Map will not be reprinted in its present form. The new Gila National Forest 1/2 inch base map will serve as a replacement for this map. However, there is still a need for handout type material at visitor registration stations.

MANAGEMENT DIRECTION:

a. A 1/4" to the mile map highlighting the trail system and showing corrected trail locations has been designed and reproduced in black and white without a written text. This map has been used at visitor registration stations. A handout version of this map will be prepared prior to June 1976.

b. A handout sheet describing regulations which apply to visitors and also describing characteristics of the Wilderness will be prepared by the Gila National Forest prior to June 1976. This handout will be made available to the public during trip planning contacts, at area Forest Service offices, and through distribution by Wilderness Rangers.

R. Land occupancy and acquistion

Land occupancy situations are: private tracts, outfitter and guide use under permit, special use permits, a memorandum of understanding, illegal use of motorized vehicles, vandalism plus illegal removal of objects of antiquity, and Federal Power Withdrawals along major water courses.

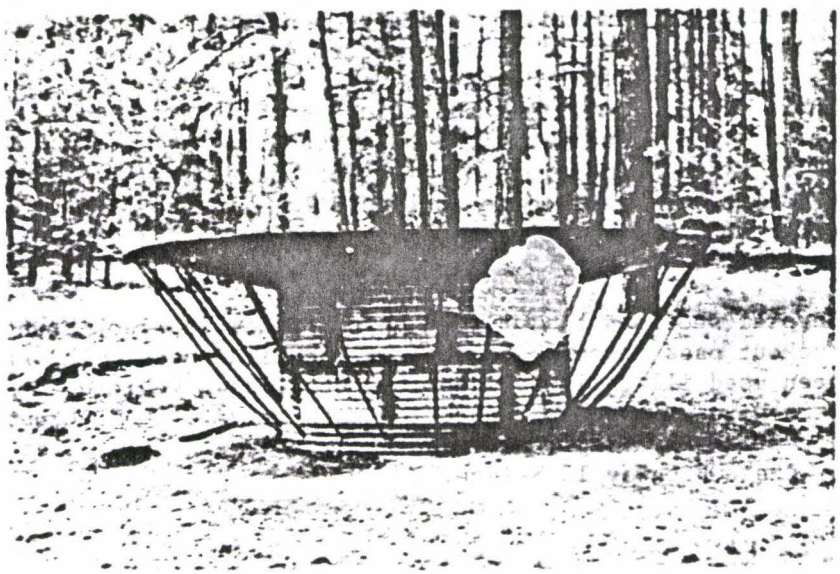
There are six outfitter and guide permits now in effect. These permits are issued with the understanding that permittees will abide by the conditions of Gila National Forest Outfitter and Guide Policy, revised to include Gila Wilderness management direction applicable to outfitter and guide use. All permits are issued for roving pack trips rather than base camp operations.

Several sections of rut road on the route to Black Mountain Lookout pass through the edge of the Wilderness. This road has been used illegally by motorized vehicles. Vehicle access problems have existed in connection with private land access use of the Green Fly Trail, and also along the main Gila River south of State Highway 15 bridge.

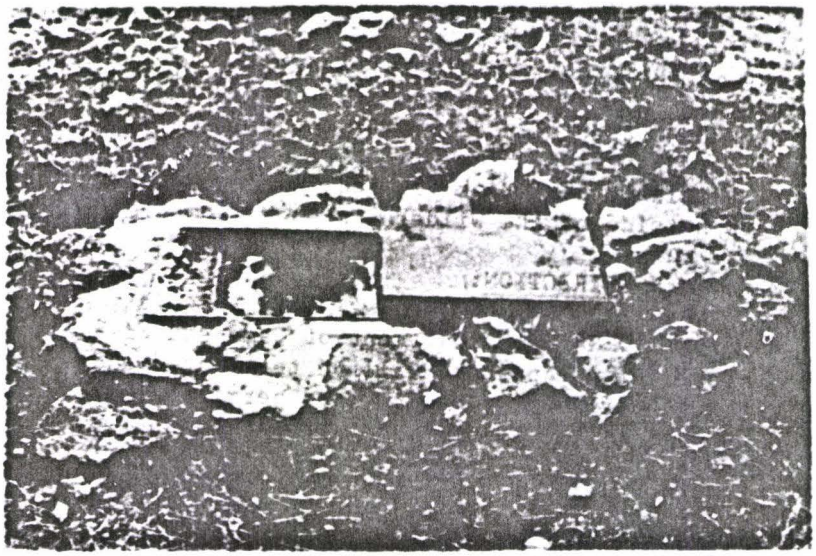
An undetermined number of prehistoric Indian cliff dwellings, pit houses, and pueblo sites exist. Many of these ruins are easily accessible from trails. Although these sites are legally protected as Federal Antiquity sites, many have been vandalized or scavanged by pothunters. Detection of occurring violations will continue to be difficult because of limited field personnel and the broad area over which the sites are scattered.

1. Uses involving nonconforming structures or activities

Special uses held by the New Mexico Department of Game and Fish are for two administrative cabins, three administrative pastures, and 13 metal trick tank and guzzler water developments for wildlife use. These circular sheet metal tanks are 18' in diameter and are designed to collect and store water, released by float valve for wildlife use. The guzzler drinkers, partially inbedded in the ground near the collection tanks, are constructed of sheet steel and concrete masonry.



One of the metal trick tank water collection and storage devices installed under special use by the New Mexico Department of Game and Fish for provision of wildlife water.



Guzzler drinking devices with float valve intakes are connected by pipeline to the trick tanks.

The trick tank and guzzler units may have served a useful purpose of providing water for wildlife in portions of the Wilderness with little other available water. However, the nonconforming appearance of these structures makes them incompatible with the wilderness resource.

MANAGEMENT DIRECTION:

a. The New Mexico Department of Game and Fish in cooperation with the Forest Service will reassess the importance of these water developments, including the degree of dependency of existing wildlife populations upon them as a source of water, and the possible need for alternate water sources to replace these structures following their removal. Reassessment will be completed during F.Y. 1977.

b. If alternate water sources in their natural state are not adequate for retaining present populations of wildlife in the absence of trick tanks, water sources will be developed using native materials and complementing the wilderness resource to the fullest extent possible. Rock-header construction and seep or spring development are possibilities both incorporating the use of rock masonry construction. If developments are necessary, they will be completed before removal of the trick tanks.

c. The metal trick tank structure permit will be cancelled and structures will be removed. Target date for removal is FY 1979+.

Two administrative cabins, Miller Springs and Prior, and associated pasture fences, plus the Willow Creek pasture are under special use permit to the New Mexico Department of Game and Fish. The Willow Creek pasture near the mouth of Little Turkey Creek is used in connection with a cabin site outside of the Wilderness on Willow Creek.

MANAGEMENT DIRECTION:

a. The New Mexico Department of Game and Fish Willow Creek special use pasture will be terminated and all improvements will be removed by the permittee by 1977.

b. Use of the existing Miller Springs and Prior Cabins by the New Mexico Department of Game and Fish will be continued for wildlife management activities and will be allowed until existing Forest Service administrative site improvements have been removed.

c. Administrative site needs of the Department of Game and Fish will be cooperatively studied with completion date of FY 1978.

d. Special use permits will be rewritten to include imposed livestock use policy and to cancel pasture fences from the permits, thus requiring their removal. This will be accomplished by the Forest during 1978.

e. If an administrative site is determined to be necessary for state personnel in their wildlife management activities, retention of an existing site and altering it to make it as compatible as possible with the wilderness resource will be preferred over establishment at a new location.

f. Special use cabins for any other purposes will not be permitted.

Two snow measurement markers maintained under cooperative agreement with the Soil Conservation Service are located near trails at Hummingbird Saddle and Whitewater Baldy. The Hummingbird Saddle marker is a 10' exposed length of 2" steel pipe with wooden horizontal and diagonal markers. The Whitewater Baldy marker is a snag with the same type of horizontal markers. Both gages are read from the air.

MANAGEMENT DIRECTION:

a. Replacement of both structures with portable measurement markers, which detach in sections and can be removed from their positions during the summer season, will be recommended to Soil Conservation Service by the Forest.

b. Storing of the markers within the Wilderness and away from areas of use will be allowed if conversion to portable type markers is made.

Occasionally requests are received from the public for the application of competitive events or new commercialized visitor services. Existing commercialized visitor services are the previously described outfitter and guide services with management direction given under Section E-6, Public Services.

MANAGEMENT DIRECTION:

a. Restrict additional commercialized visitor services to those necessary for, and compatible with, realization of wilderness values, and those that can be carried out in a manner harmonious with use by visitors who do not engage these services.

b. Special use permits for base packer stations or base camps will not be permitted.

c. Contests such as physical or mental endurance of persons and/or animals, foot races, competitive trail rides, survival contests, and other activities of this nature are not permitted.

2. Land acquisition

There are 4 tracts of private land totaling 192 acres. All are patented mining claims located in the western end of the Wilderness.

Difficulties in acquiring the mining claims can be expected due partly to possibility of minerals of economic value and partly to multiple ownership. Private lands within the area are classified as number two priority for acquisition with the Southwestern Region. Private tracts are shown in Appendix XIV.

MANAGEMENT DIRECTION:

Acquisition of private tracts of land will be vigorously pursued.

3. The Hooker Dam and Reservoir

The Hooker Dam and Reservoir or suitable alternative may be a part of the Central Arizona Project. If the Hooker site is selected, on the Gila River outside the Wilderness, it would flood 660 acres in the Gila Wilderness and Gila Primitive Area if the "high" dam were built and 220 acres if the "low" dam were constructed.

The Forest Service prepared a Multiple Use Impact Survey Report on this proposed dam in 1968. The report recommendations, which yet constitute the Forest Service position on the project, were:

a. To prevent encroachment upon the Gila Wilderness and Gila Primitive Area, the Bureau of Reclamation carefully study the feasibility of alternate sites as an acceptable substitute for the Hooker location.

b. The Forest Service develop necessary recreation improvements to provide optimum utilization of the site. Construction in the Wilderness and Primitive Area will be limited to trails and necessary sanitation measures.

c. The Bureau of Reclamation bear the cost of moving access roads, fences, and trails affected by the project.

d. A timetable of Forest Service construction be developed to assure that recreation facilities are ready for use when the reservoir is opened to the public including measures needed to protect the Wilderness from unauthorized use.

e. That the Bureau of Reclamation purchase all private land within and directly affected by the proposed project.

MANAGEMENT DIRECTION:

1. Maintain the position outlined above unless there are justifiable reasons to change.

2. Require additional studies of the effect of the project on the habitat of 3 endangered species of minnows which may occupy portions of the Gila River that would be flooded within the Wilderness.

3. Require additional study of the effect of the proposal on the Turkey Creek Natural Area, proposed for location in this drainage.

4. Require additional study of species of plants and animals that may occur only at lower elevations along Turkey Creek and the Gila River and the effect the proposal would have upon their eventual elimination from the Wilderness.

5. Prohibit the removal of rock borrow material from ridges and outcroppings to the north of the proposed dam site and near to the Wilderness boundary because of the detracting effect such removal would have on the Wilderness itself.

6. Study the relative compatibility of impoundment recreation use and Wilderness use.

The Hooker Dam, if built, would flood the Gila River bottom as shown here outside of the Wilderness near the dam site.

4. Removal of aircraft wreckage

The possibility of aircraft crashing in the Wilderness exists. Many of the canyons, which appear to be deep and broad at lower elevations, quickly become restrictive for safe air travel due to abrupt changes in topography at higher elevations. The number of existing wrecked aircraft has not been determined.

MANAGEMENT DIRECTION:

a. Existing or future aircraft wreckage located on-the-ground will be "X'ed" with spray paint marks, visible from the air, to avoid confusion during subsequent air search operations, until wreckage is removed.

b. Aircraft wreckage will be removed, requiring owners or their responsible representative to accomplish removal.

c. Removal will be accomplished without the use of motorized equipment.

d. The use of motorized equipment for aircraft removal, such as the services of a helicopter, requires approval by the Regional Forester on a basis of demonstrated need.

e. Older wreckage, for which ownership cannot be determined, will be removed by the Forest Service, either through salvage contract or by using Forest Service personnel and funds.

5. Federal power withdrawals

The Federal Power Commission holds withdrawals along most of the Main Gila River and portions of its West, Middle, and East Forks for possible power dam locations. These withdrawals serve no useful purpose since the Wilderness Act provides for power dam construction if the need becomes evident.

MANAGEMENT DIRECTION:

Cancellation of Federal Power Commission withdrawals will be pursued by Forest and Regional Office personnel.

S. Transportation systems

1. Trails - Needs and construction standards

An inventory of existing and proposed trails is included as Appendix XI. Many trails previously shown as part of the existing trail system, but found to be nonexistent during trail mileage logging, have been eliminated from the system or converted to proposed status. Construction or reconstruction priorities are in most cases pending determination of use capacity for specific segments of the Wilderness. The trail system, with exterior access included, is shown on Map I-Appendix XV. Establishment of visitor use capacity may require changes in the system.

Maintenance intervals, believed to be appropriate at this time, but subject to revision upon determination of segment use capacities, have been assigned for each trail. This information is also shown in Appendix XI.

MANAGEMENT DIRECTION:

a. Trail reconstruction will be limited to projects necessary to correct soil erosion problems and/or to restore trails to standards as described below.

aa. Construction of new trails will be limited to proposed trails as shown on Map I-Appendix XV.

b. No bridges are planned. Location of proposed trails will be designed so that stream crossing can be safely negotiated without bridges.

bb. Development of access routes that would facilitate day use recreation will not be planned.

c. The services of the Forest Landscape Architect will be used on planning construction or reconstruction routes to assure blending with the wilderness resource and maximum availability of scenic attractions without lowering the quality of these attractions.

d. Speed of travel will not be an important factor for trails designed for public use and Wilderness enjoyment.

e. Routes of new or reconstructed trails will provide a variety of aspects, vegetative types, and natural curves and grade changes desirable for increasing the opportunity for solitude and enjoyment by visitors. Where routes are planned to accommodate year round use, south facing slope locations will be used if possible.

f. During trail construction surveys, construction stakes will be used only where tread work is necessary. The remainder of the route will have only a flagged line.

g. All stakes and flagging will be promptly removed when construction is completed.

h. Trails will be located and designed to appear as a part of the wilderness environment rather than an instrusion on the country. Trails will wind through the trees and around undulations in topography whenever possible, as opposed to straight alignment normally sought in trail construction.

i. Sustained grades will not be sought in trail construction. Grades which promote a feeling of solitude by minimizing sight distance between parties of visitors, and which undulate, following the "lay of the land," will be sought.

j. Excessive grades that may cause damage to the wilderness resource will be avoided. Soil type sensitivity will generally be a major factor limiting grade.

k. Overall clearing for trails will not exceed 7' maximum width, and trees outside of this width will not be cut unless they present a safety hazard.

l. Where trail tread construction is necessary along slopes over 30 per cent or where soil loss would be accelerated by lack of tread construction, drainage will be built into the trail, to the extent feasible, to prevent erosion.

m. Constructed trail tread width will vary depending on purpose of the trail, side-slope percentage, and planned use. Tread width will not exceed 24 inches.

n. Stream damage will be avoided or minimized in locating, constructing, or maintaining trails.

o. Access to abandoned trails or trail sections will be blocked and stabilization of disturbed soil will be provided as needed to prevent accelerated erosion.

p. The use of herbicides for the treatment of cut brush stubs in trail treads is prohibited.

q. Trails will not be surfaced. For this reason, seeps and bogs must be avoided to assure a firm natural trail surface.

r. Switchbacks will be avoided whenever possible.

s. Branches trimmed from standing trees will be cut flush with tree trunks so that scars will quickly heal.

t. Trail blazes will be allowed and will be accomplished using blazing irons or other tools which provide a blaze of uniform quality. Blazes will be spaced no closer together along the trail than required for line of sight.

u. Windfalls across trails too large to step across on horseback, will be removed as soon as possible to prevent rerouting of trails around them.

v. Log, rock, or earthen waterbars and outsloping of treads will be used where necessary to accomplish drainage.

w. Slash or debris resulting from trail clearing will not be burned; tops and limbs will be lopped from downed trees and scattered away from the trail.

x. Seeding of trail side areas disturbed in construction will be done using native species of grass seed common to the trail location.

y. Trail construction, reconstruction, and maintenance will be accomplished without the use of motorized equipment. Regional Forester's approval, in advance, will be required for any projects requiring motorized equipment.

z. Closing to motorized vehicle use of portions of nonwilderness trails that connect trailheads with the Wilderness will be done if the need arises to provide increased resource protection and safety.

2. Exterior access roads

Access roads to Wilderness trailheads are listed in Appendix XIV. Existing and proposed design classes are given along with estimated construction or reconstruction costs for each road. Construction and reconstruction priorities have not been assigned.

MANAGEMENT DIRECTION: (To be inserted in other appropriate plans.)

a. Access roads will not be developed prior to determination of visitor use capacities for specific segments of the Wilderness.

b. Road construction design classes for new access routes will be coordinated with capacity visitor use for those segments of the Wilderness served by each road.

T. Signing

Signs are a basic and effective means for facilitating visits to the Wilderness. In conjunction with trail measurement and inventory, signing needs for existing trails were also assessed. A total of 128 wilderness-type signs, constructed of 2-inch stock redwood, have been installed. These signs are stained a weathered-grey color with unpainted lettering.

Bear damage to these signs has already been extensive. Many were damaged beyond repair less than one year after installation. Damage has been particularly heavy on the Glenwood Ranger District. Some of the last signs installed on this District were banded with metal in hope of preventing damage, but damage still occurred. Test signs constructed of one-inch ponderosa pine have been installed at several locations. These have not been evaluated for effectiveness in preventing bear damage.

1. Specifications for Wilderness signs

   a. The number of directional signs for trails will be limited to those needed for progressive travel.

   b. The naming of mountain peaks, streams, divides, or other features will be acceptable as trail destinations on signs if such features are primary destinations.

   c. Interpretive signing will not be done.

   d. Signs will be mounted on peeled, unstained, native posts with a 5-7 inch top diameter. Properly located trees may be used as an alternative for sign mounting.

   e. Entrance signs will be located only at trail entrance points where they can be installed without relocation upon reclassification of the Gila Primitive Area.

   f. Dead-end trails will be so signed at both the beginning and end of the trail.

   g. Six inch aluminum nails with common heads may be used for attaching signs to post or trees. This practice may prevent damage by bears (allowing the release of the sign from its mounting) thus discouraging additional gnawing or breakage.

   h. The Glenwood Ranger District will test and evaluate signs using several different types of wood and wood treatment for resistance to bear damage and natural deterioration. Test signs will be designed to harmonize with the wilderness resource.

2. Regulatory and information signs

To assure that the public is well informed about management, regulatory signs are necessary at some locations.

MANAGEMENT DIRECTION:

   a. The use of regulatory signs will be restricted to trail entrance points.

   b. The use of management and regulatory signs or signs indicating [illegible] will be allowed at appropriate locations within the [illegible] or where the hazard exists.

c. Where wilderness-type signs are required for regulatory or informational signs, shapes, finishing, and mounting specified for trail signs will be used.

d. Fence hazard warning signs at several locations along the portion of the Gila River used for float trips will be designed similar to trail signs, but routed letters must be painted a visible color for these signs to effectively serve their intended purpose.

e. Metal posters used for posting the boundary will be standard.

f. The use of metal posters will be allowed for "Please Close the Gate" signs on range fence gates.

U. Research

Opportunities for certain types of research exist, such as the study of natural ecosystems. Research will be limited to that which will not have a direct effect on the wilderness resource and will in no way alter this resource. The proposed Turkey Creek Research Natural Area would be compatible with wilderness, but would require specific management direction. For this reason the proposed area has been designated as a management unit.

An area about 40 acres in size on the Rough Canyon Allotment containing pure Chihuahua pine, a species rare to the Wilderness, has also been designated as a management unit.

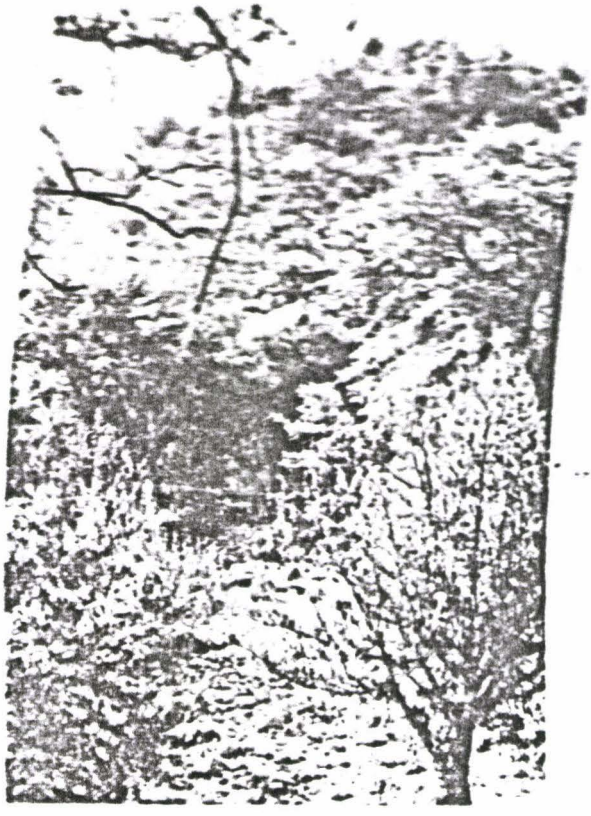
MANAGEMENT DIRECTION:

1. Grazing of cattle will not be allowed within the Turkey Creek Research Natural Area, and necessary adjustments will be made in the Watson Mountain Allotment boundary.

2. The Turkey Creek Research Natural Area will be closed to camping.

3. On-the-ground boundaries of this unit will be determined and appropriately signed.

4. Construction of improvements within the Rough Canyon Allotment area of Chihuahua pine vegetation is prohibited.



Unique plant and animal communities of the Turkey Creek Research Natural Area will be perpetuated with minimum disturbance by normally acceptable resource uses.

V. The Wilderness Boundary

The boundary is partially located on legal subdivision lines and partially on topographic features such as ridges and breaks. (Appendix XIII.) Reclassification of the adjacent Gila Primitive Area, as required by the Wilderness Act, will change portions of the Wilderness boundary.

Portions of the boundary are posted with standard boundary posters. Additional boundary posting is not anticipated before Gila Primitive Area reclassification has been completed.

MANAGEMENT DIRECTION:

A. Boundary signing efforts will be concentrated near entrance points where there is a possibility of illegal vehicle entry, and where prospecting and mining activities are active or have possibility of being active.

B. Barriers necessary for the prevention of illegal motorized vehicle entry will be installed where the possibility for such an occurrence exists.